



GOVERNMENT OF INDIA
TARIFF COMMISSION

Report on the Continuance of
Protection to the Calcium Carbide
Industry and Fair Ex-Works
Selling Price of Calcium Carbide

Produced by

Birla Jute Manufacturing Company Limited

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GOVERNMENT OF INDIA
MINISTRY OF COMMERCE AND INDUSTRY
RESOLUTION

Tariffs

New Delhi, the 9th October, 1958.

No. 37(1)-T.R./58.—The Tariff Commission has submitted a Report on the continuance of protection to the Calcium Carbide Industry and fair ex-works selling price of calcium carbide produced by the Birla Jute Manufacturing Company Limited. Its recommendations are as follows :—

- (1) Protection to the industry should be extended for a further period of three years beyond 31st December, 1958, at the existing rate of protective duty, i.e., 50% *ad valorem*.
- (2) Government should take early steps to have a careful assessment made of the demand of high grade electrode paste and to arrange to establish one or more units to manufacture such paste in the country as quickly as possible.
- (3) Government should take necessary steps at an early date to establish capacity for the manufacture of superior high grade coke. Until such capacity is established and/or alternative source of supply of high grade coke is located, it is important that there should not be any restriction on the supply of coke to the calcium carbide industry from the Railway coke plant at Giridih.
- (4) The industry should take up with the Indian Standards Institution the question of the revision of those grade sizes which are not wanted by the consumers, and ensure that there is no divergence between the specifications of grade sizes in which calcium carbide is marketed and those prescribed in the Indian Standard.
- (5) There has been some improvement in the quality of calcium carbide but the quality still falls short of the standards prescribed in the Indian Standards Institution Specification. Efforts should be made to improve the quality of the domestic products so as to bring them to the Standard quality 'A' of the I.S.I. specification.
- (6) One of the serious obstacles to the achievement of radical improvement in the quality of calcium carbide produced by Birla Jute Manufacturing Co. Ltd. is the inferior quality of raw materials, namely limestone and coke. The Company should, therefore, exercise better quality control over the materials charged into the kiln and the furnace.

(ii)

- (7) The system of differential prices between the two classes of consumers, namely, dissolved acetylene manufacturers and others should be abolished forthwith.
- (8) The fair ex-works selling prices of different grades of calcium carbide should be fixed as given below and should hold good up to the end of 1960 :—

Size	1 Cwt. packing	2 Cwt. packing Per cwt.
4/80 mm	Rs. 43.50	Rs. 43.00
25/80 mm	Rs. 45.50	Rs. 44.25
15/25 mm	Rs. 41.50	Rs. 40.50
4/15 mm	Rs. 35.00	Rs. 34.00

These selling prices are exclusive of charges such as transportation and handling from the factory, local taxes, if any, and Selling Commission payable to agents.

- (9) The next review of fair selling prices should take place at the beginning of 1961 or should be held earlier if the cost of production goes down appreciably after a new furnace and additional equipment have been commissioned by the firm.

2. Government accept recommendation (1) and will take suitable steps to implement it in due course.

3. Government have taken note of recommendations (2) and (3) and steps will be taken to implement them as far as possible.

4. The attention of the industry including the Birla Jute Manufacturing Co. Ltd., Calcutta, is invited to recommendations (4) to (6).

5. Government also accept recommendations (7) to (9) and will take steps to implement them in due course. As regards selling commission payable to Agents, the following arrangements have been approved :—

- (i) The manufacturer will continue to supply carbide directly to all Dissolved Acetylene Gas Manufacturers (Indian Oxygen Ltd., Asiatic Oxygen & Acetylene Co., Industrial Gases Ltd., Modi Vanaspati Manufacturing Company Ltd.) for their acetylene bottling plants at their net ex-factory rates without any addition on account of selling commission or other charges.
- (ii) For all other parties, supplies will be made as usual, through their agents, who may charge selling commission at not more than Rs. 5 per drum of 50 Kgm. on their net ex-factory rates.

ORDER

ORDERED that a copy of the Resolution be communicated to all concerned and that it be published in the *Gazette of India*.

S. RANGANATHAN,

Secretary to the Government of India.

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सत्यमेव जयते

REPORT ON THE CONTINUANCE OF PROTECTION TO THE CALCIUM CARBIDE INDUSTRY AND FAIR EX-WORKS SELLING PRICE OF CALCIUM CARBIDE PRODUCED BY BIRLA JUTE MANUFACTURING CO. LTD.

1.1. Early in 1940 the Government of India announced that industries promoted with their encouragement during war-time might feel assured that, if they were conducted on sound business lines, they would, by such measures as Government might devise, be protected against unfair competition from outside. In accordance with this decision, an assurance of protection was given to the calcium carbide industry in Government's Resolution No. 136-T(1)/42 of 31st October, 1942 which stated that :

History of protection

"As the indigenous production of calcium carbide is an urgent war necessity, the Government of India have decided, in accordance with the declared policy, to give an assurance of post-war protection against unfair competition from abroad to all those who are either at present engaged in, or wish to undertake its manufacture provided their affairs are conducted on sound lines."

Notwithstanding this assurance, commercial production of calcium carbide was not undertaken by any manufacturer during the period of World War II. The first application for protection and assistance for manufacture of calcium carbide was made to Government towards the end of 1954 by Birla Jute Manufacturing Co., Ltd., which commenced production of carbide near Calcutta on 15th November, 1954.

1.2. An inquiry into the claim of the calcium carbide industry to protection and/or assistance was undertaken in 1956. In our report dated 27th February 1956 we recommended that protection to this industry should be granted till 31st December, 1958 and that a standard rate of protective duty of 45 per cent *ad valorem* should be levied on imported calcium carbide. The latter part of the recommendation involved a reduction of the applicable import duty from 50 per cent to 45 per cent. *ad valorem*. Government accepted the recommendation for the grant of protection to the industry till 31st December, 1958, but not the one relating to reduction of the import duty from 50 per cent. *ad valorem* to 45 per cent. *ad valorem*. Accordingly the protective duty on imported calcium carbide was fixed at 50 per cent. *ad valorem* by the Indian Tariff (Second Amendment) Act, 1956.

2.1. The protection granted to the calcium carbide industry is due to expire on 31st December, 1958. The present inquiry was therefore undertaken under section 11(e) read with section 13 of the Tariff Commission Act, 1951, by which the Commission is empowered to inquire into and report on any further action in relation to the protection granted to an industry with a view to its increase, decrease, modification or abolition according to the circumstances of the case. We also received a

Scope of the inquiry

reference from Government under section 12(d) of the Tariff Commission Act to examine and report on the fair ex-works price of calcium carbide produced by Birla Jute Manufacturing Co. Ltd. A copy of Government's letter on the subject is given in Appendix I.

2.2. This report consists of two parts. Part I deals with the main question which is the review of protection granted to the calcium carbide industry, while Part II contains our recommendations regarding fair ex-works prices.

PART I

REVIEW OF PROTECTION GRANTED TO THE CALCIUM CARBIDE INDUSTRY

3.1. Questionnaires for producers, importers and consumers of calcium carbide were issued on 19th December, and a press note was issued on 24th December, 1957 inviting firms, persons and associations interested in the industry or in industries depending on the use of calcium carbide to obtain copies of the relevant questionnaires and send replies. The Development Wing and the Indian Chemical Manufacturers' Association, Calcutta, were asked for memoranda on the present position of the domestic industry. The State Governments of West Bengal, Bombay, Madras and Kerala were requested to furnish information with regard to the manufacturing units situated or proposed to be located in their respective States. The Geological Survey of India, Calcutta, the Central Fuel Research Institute, Dhanbad and the Central Electro-Chemical Research Institute, Karaikudi were addressed for information about the various raw materials required by the industry, while details about freight and supply of wagons for transport of raw materials were called for from the Ministry of Railways (Railway Board). The Director General of Supplies and Disposals, New Delhi, was asked for particulars of purchases of calcium carbide by Government during 1956 and 1957. Lastly, the Central Water and Power Commission was addressed for information about the availability of cheap power in the several regions of the country. A list of firms, associations, etc., to whom our questionnaires and letters were issued and from whom replies or memoranda were received is given in Appendix II.

3.2. Dr. S. K. Muranjan and Shri J. N. Dutta, Members, visited the factory of Birla Jute Mfg., Co., Ltd. (Calcium Carbide Department) at Birlapur, West Bengal, on 10th February, 1958. Shri K. R. Damle, Chairman and Shri C. Ramasubban, Member visited the factory on 17th March, 1958 and Shri R. S. Bhatt, Member on 18th April, 1958.

3.3. Shri S. V. Rajan, Cost Accounts Officer, visited the above factory from 13th to 17th March to examine its cost of production of calcium carbide. During that period Shri S. S. Mehta, Technical Director (Chemicals) also visited the factory.

3.4. A public inquiry into this industry was held at our office on 8th April, 1958. A list of persons who attended the inquiry is given in Appendix III.

4.1. Of the recommendations made by the Commission in its last report (1956), the one relating to the grant of protection and the rate of protective duty has been dealt with in paragraph 1.2. The other important recommendations are set out below with a brief statement indicating the extent to which they have been implemented.

4.2. "The Indian Standards Institution should take expeditious steps to finalise standards for calcium carbide."

The I.S.I. has since published its specifications for Calcium Carbide, Technical, *vide* Indian Standard Specification No. I. S. 1040-1957. The matter is discussed further in paragraph 8.

4.3. "There is need for considerable improvement in the quality of calcium carbide produced by the Birla Jute Mfg., Co., Ltd., who should take immediate steps to improve and maintain uniformly the quality of their product."

The Company has informed us that subsequent to the last inquiry the quality of its product has improved as a result of the efforts made by it in regard to the training of its workers and staff, and adjustments of its equipment and in the composition of raw materials. The question is discussed further in paragraph 9.

5.1.1. *Present position.*—At the time of the last inquiry in 1956 there were three units in the industry, namely, (a) Birla Jute Manufacturing Co., Ltd., Birlapur (West Bengal), (b) Industrial Chemicals Ltd., Talaiyuthu (Madras) and (c) Travancore Electro-Chemical Industries Ltd., Chingavanam (Kerala). Of these, only the first unit was engaged in commercial production of calcium carbide while the other two units had only pilot plant and were engaged in intermittent production on a small scale. All the three units had schemes for expansion. In addition, licences had been granted to two parties, namely, Travancore-Cochin Chemicals Ltd. and Mr. I. H. Safrin, to erect new units—the former at Alwaye (Kerala) and the latter at Thana (Bombay). Since then, there has been little progress in the industry.

Birla Jute Manufacturing Co., Ltd., has continued to operate its unit on a commercial scale, while Industrial Chemicals Ltd., has been in operation only on a small scale. Travancore Electro-Chemicals remained closed while Travancore-Cochin Chemicals Ltd., has surrendered its manufacturing licence. Lastly, Mr. Safrin was unable, for various reasons, to make much progress towards the utilisation of his licence.

5.1.2. Brief particulars regarding the two working units are given below :

Birla Jute Manufacturing Co., Ltd., Calcutta.—The calcium carbide unit forms a small part of Birla Jute Manufacturing Co., Ltd., (a public limited company) and the entire capital of the unit was advanced by the Jute Section of the company subject to payment of interest at 4½ per cent per annum. Subsequent to the last inquiry, the

unit installed a tapping transformer and also added a few equipments to improve the operation of the factory. The gross value of the fixed assets employed in the manufacture of calcium carbide stood at Rs. 30·61 lakhs on 31st March, 1957 (as against Rs. 29·73 lakhs at the time of the last inquiry). The working results of the calcium carbide unit as published in the Balance Sheet of Birla Jute Manufacturing Co. Ltd., showed a loss of Rs. 0·28 lakhs for the year ended 31st March 1956 and a profit of Rs. 1·96 lakhs for the year ended 31st March, 1957, after providing Rs. 5·14 lakhs and Rs. 4·18 lakhs for depreciation in the respective two years. The total number of workers (unskilled, semi-skilled and skilled) employed by the unit is 150.

Industrial Chemicals Ltd., Talaiyuthu.—At the time of the last inquiry the authorised capital of this company was Rs. 5 lakhs and the subscribed and paid-up capital Rs. 0·775 lakhs. Subsequently, the paid-up capital of the company was raised to Rs. 5 lakhs. The original value of the fixed assets was Rs. 1·21 lakhs and the depreciated value on 30th June 1957, Rs. 0·91 lakhs. The losses sustained by the company during the years ended 30th June, 1956 and 30th June 1957 were Rs. 18,268 and Rs. 3,588 respectively. The total number of workers employed by the company is 35.

5.1.3. *Rated capacity.*—At the time of the last inquiry in 1956 we assessed the annual rated capacity of the three units at 5050 tons and expected that the aggregate rated capacity of the industry would remain unchanged till the end of 1957. The capacity of each of the units was as follows :—

	Tons
1. Birla Jute Mfg. Co. Ltd.	3,300
2. Industrial Chemicals Ltd.	750
3. Travancore Electro-Chemical Industries Ltd.	1,000
TOTAL.	5,050

As anticipated by us, there has not been any change in the rated capacity, but since Travancore Electro-Chemical Industries Ltd. is not in production, the effective capacity has gone down to 4,050 tons.

5.1.4. *Actual production.*—The statement below shows the rated capacity and actual production during 1956, 1957 and 1958 (January and February) :

(In tons)

Producer	Annual rated capacity	Actual production		
		1956	1957	1958 (Jan- Feb.)
Birla Jute Mfg. Co. Ltd.	3300·00	2781·00	3418·00	567·50
Industrial Chemicals Ltd.	750·00	108·50	178·00	39·70
TOTAL	4050·00	2889·50	3596·00	607·20

5.2. Future plans for expansion.

5.2.1. There are at present three schemes for expansion of capacity and two for establishment of new units. Salient features of those schemes are indicated below :

5.2.2. *Expansion of existing units.*—Birla Jute Mfg. Co., Ltd., and Industrial Chemicals Ltd., have plans for expansion of their capacity. Travancore Electro-Chemical Industries Ltd., which has remained closed since 1955, intends to put up a bigger plant in co-operation with the Government of Kerala.

5.2.2.1. *Birla Jute Mfg. Co., Ltd., Calcutta.*—Mention was made in our last report (1956) that this company had applied to Government for permission to increase the capacity of its carbide unit to 10,000 tons a year on the ground that the existing plant was uneconomic in size, but that Government had deferred its decision. We are now informed that the company renewed its application in July, 1956 and asked for permission to expand its capacity by 20 tons a day or 6,600 tons per annum on the ground that except the furnace and the transformer which have to be replaced with equipment of larger capacity, the remaining plant and machinery in the factory would be adequate for the additional production proposed, and further, the larger output and other improvements which the company expected to achieve with a bigger furnace, would bring down the cost of production by about Rs. 150 per ton. A manufacturing licence under the Industries (Development and Regulation) Act, 1951 was issued in October, 1956 permitting expansion of its capacity by 600 tons per month. In the course of the public inquiry it appeared that there had been, on the part of the company, some misunderstanding of Government's intention regarding the extent of expansion sanctioned. While the licence issued by Government has reference to expansion and not to the aggregate capacity of the unit after expansion, the company appears to have proceeded on the basis that the total capacity sanctioned by Government was 600 tons per month or 6,600 tons per annum (taking 330 working days to a year). The representatives of the unit, who attended the public inquiry, informed us that the unit after expansion would consist of two vertical kilns (including the existing one) and a bigger electrical furnace (cylindrical and stationary) of 4800 KVA with necessary ancillary equipment capable of producing 6,600 tons of calcium carbide in a year. They have received an import licence for the furnace and the transformer. As regards the second kiln, it will be fabricated locally according to the design to be furnished by a foreign firm, though a few components which are not available indigenously may have to be imported. The company has already placed orders for the furnace and the transformer with Messrs. Elektro-kemisk A/S of Norway. Deliveries are expected to be completed by September, 1959 and the company hopes to operate the new furnace by the middle of 1960. We understand that this project will involve a fresh investment of Rs. 26 to Rs. 27 lakhs. Subsequent to the public inquiry we were informed that the power available at Birlapur, after meeting the requirements of the other existing establishments, would be just adequate to operate a

4800 KVA furnace. Birla Jute Manufacturing Co., Ltd., would not be able to operate the existing 10 ton furnace simultaneously with the new cylindrical furnace which would be put into operation for the expanded capacity. The company may, however, commission the 10 ton furnace when additional power becomes available.

5.2.2.2. *Industrial Chemicals Ltd., Talaiyuthu.*—The company has a scheme for raising its production to 10,000 tons per annum involving an expenditure of the order of Rs. 45 lakhs out of which machinery alone (exclusive of auxiliary machinery) would cost about Rs. 20 lakhs. Its application for substantial expansion of capacity was made on the grounds that it had the requisite technical know-how, its factory was in close proximity to high grade limestone quarries and it would have the advantage of cheap electricity. It received the necessary manufacturing licence in August, 1956 and has arranged for the required capital. The overseas supplier of machinery (Elektro-kemisk A/S of Norway) has accepted the deferred payment terms suggested by Government and an import licence for the plant and machinery has been issued to the company. We were informed that the supplier had asked for guarantees from specified institutions for subsequent instalments under the deferred payment arrangements and that the matter was under negotiation. The representative of the unit who attended the public inquiry stated that he had every hope that the negotiations would be successful and that orders for plant and machinery would be placed with suppliers before the end of April, 1958. The company expects that the new plant will go into production at the end of 1959.

5.2.2.3. *Travancore Electro-Chemical Industries Ltd.*—A licence was issued to the firm in January, 1956 for raising its capacity to 900 tons a month. Later, certain technical irregularities under the Industries (Development and Regulation) Act, 1951 came to notice and the licence granted in 1956 had to be amended. A modified licence was issued in May 1957 fixing the capacity of the existing factory at 90 tons a month and permitting it to be raised to 900 tons per month. However, owing to financial difficulties the company did not so long apply for an import licence for plant and machinery. It is now reported that the Government of Kerala is willing to extend financial assistance to the company so as to enable it to proceed with the scheme.

5.2.3. *Establishment of new units.*—As stated earlier, in our 1956 report we had made a reference to Travancore-Cochin Chemicals Private Ltd., Alwaye and Mr. I. H. Safrin, Bombay, as prospective producers of calcium carbide. The licence issued to the former was, at the request of the company, revoked in March, 1957. The present position with regard to the licence issued to Mr. I. H. Safrin is indicated below :—

5.2.3.1. *Mr. I. H. Safrin (Indian Carbide Corporation Private Ltd).*—A new company called the Indian Carbide Corporation Private Ltd. has been floated with an authorised capital of Rs. 40 lakhs and subscribed and paid-up capital of Rs. 6 lakhs. The proposed factory will be located at Thana for which land has been purchased. The company

has received the import licence for plant and machinery but has not been able to secure a guarantee from a financial institution about the payment of subsequent instalments under the deferred payment arrangements agreed to by its overseas suppliers of machinery. The electric furnace and the lime kiln are reported to have been ordered. We are informed that the plant would have a rated capacity of 9,000 to 10,000 tons of calcium carbide per annum and that the erection of the factory would be completed during the second half of 1959. The company hopes to produce 6,000 tons of carbide in the first year of production.

5.2.3.2. *Calico Mills, Chemical Division, Ahmedabad.*—This company applied for a licence to establish a factory in Bombay for the manufacture of Polyvinyl Chloride and to incorporate in it a calcium carbide unit with a daily capacity of 20 tons (or 6,600 tons a year). The output of this unit will be used partly for the manufacture of polyvinyl chloride and partly for sale as carbide in the market. Government informed the company that a licence under the Industries (Development and Regulation) Act, 1951 will be issued if it is able to arrange for satisfactory deferred payment terms. We are informed that this has been arranged and that the company expects to receive import licence for plant and machinery shortly. The company hopes that its carbide unit will go into production by the middle of 1960.

5.3. Thus the capacity that has been sanctioned comes to 36,600 tons a year as stated below :

	Tons*
1. Birla Jute Mfg. Co. Ltd.	6,600
2. Industrial Chemicals Ltd.	10,000
3. Travancore Electro-Chemical Industries Ltd.	10,000
4. Indian Carbide Corporation Private Ltd.	10,000
TOTAL	36,600

*N.B.—Although the total capacity licensed by Government is 10,000 tons, but as the firm does not intend to utilise more than 6,600 tons for the time being, we have accepted the lower figure.

Of these, 1, 2 and 4 have obtained the import licences, while 3 has not yet applied for one. We consider it unlikely that this unit (No. 3) will commence production before 1961. Further, of the three companies which have received import licences, the representative of the Indian Carbide Corporation Private Ltd., who attended the public inquiry, could not furnish any information about the arrangements made for the raising of additional capital, guarantee of payment of subsequent instalments under the deferred payment scheme, delivery schedules of the suppliers etc. We are not certain whether this unit would be commissioned before the end of 1961 and have, therefore, left it out of account for the purpose of the present inquiry. If Birla Jute Manufacturing Co., Ltd., Industrial Chemicals Ltd., and Calico Mills, Chemical Division succeed in erecting their plant according to their respective plans, we may expect by the end of 1960 a rise in effective indigenous capacity of 19,150 tons a year (Birla—3,300 tons, Industrial Chemicals—9,250 tons and Calico Mills—6,600 tons).

6.1. In our last report (1956) we estimated that the demand for calcium carbide would be 10,000 tons in 1956, 13,000 tons in 1957 and 16,000 tons in 1958 and that the demand thereafter was likely to go up to 25,000 tons by 1960-61. These estimates depended on (a) the extent of expansion in the usage of carbide for welding purposes which would be in proportion to the expansion in the steel fabrication industry, subject to provision being made for the alternate use of electric welding and (b) development of the organic chemicals industry which was expected to absorb 10,000 tons and might do so only if suitable conditions were available for its development.

6.2. At present the bulk consumption of calcium carbide continues to be in the generation of acetylene gas. The demand for calcium carbide by the organic chemical industries has not yet developed. We have been informed by the Development Wing that there is at present no programme of production of organic chemicals based on acetylene. With regard to plastics, Calico Mills (Chemical Division), Ahmedabad have submitted, as already mentioned, a scheme for manufacture of polyvinyl chloride based on acetylene generated from calcium carbide. Nearly 6,000 tons of calcium carbide may be consumed by this project alone when it is fully developed but initially for a period of two or three years the consumption of carbide in the manufacture of P.V.C. is not expected to exceed 2,000 tons a year. The representative of the company stated at the public inquiry that the surplus production of carbide would be sold in the market.

6.3. In connection with the present inquiry we have received several estimates varying from 10,000 tons to 16,000 tons for demand in 1958 and from 12,000 tons to 30,000 tons for demand in 1961.

6.4. The Development Wing has furnished the breakdown of annual demand for 1957-1961 on the lines of the following pattern of consumption :

Users	(In tons)				
	1957	1958	1959	1960	1961
Dissolved acetylene manufactured in organised factories	6,500	6,800	7,500	9,000	11,000
Acetylene generated in engineering industries locally	3,500	3,700	4,500	5,400	6,500
Mine-lighting, lighthouse and miscellaneous purposes	1,500	1,500	1,700	2,000	2,500
TOTAL	11,500	12,000	13,700	16,400	20,000

Its expectation of consumption of calcium carbide on zonal basis is as follows :—

Eastern zone (West Bengal) Assam, Bihar and Orissa	45 per cent
Western zone (Bombay, Saurashtra and Madhya Pradesh)	30 per cent
Southern zone (Andhra Pradesh, Mysore, Madras and Kerala)	15 per cent
Northern zone (Uttar Pradesh, Punjab, Rajasthan and Kashmir)	10 per cent

According to the Development Wing, after the bigger furnaces proposed to be installed in the country have commenced regular production of calcium carbide, the demand for engineering industries and miscellaneous purposes will not only be fully met but there will also be surplus available for development of organic chemicals. It also expects that the price of carbide in bulk will come down sufficiently for economic production of organic chemicals being undertaken with carbide as the starting raw material.

6.5. We have collected information relating to sales of indigenous carbide during 1956 and 1957 from the producers and obtained statistics of imports from the Director General of Commercial Intelligence and Statistics. They are tabulated below :

	(In tons)	
	1956	1957
Indigenous production	3551.05	3745.0
Import	5830.40	*7822.00
	9381.45	11567.04

Thus the apparent consumption of calcium carbide was 9381 tons during 1956 and 11,567 tons in 1957. The representatives of the several interests who attended the public inquiry were of the view that there was some amount of unsatisfied demand during these two years and accordingly the real demand could be put at 10,000 for 1956 and 12,000 tons for 1957.

6.6. As regards the future, the various estimates were discussed at the public inquiry and it was agreed that as there was no programme of production of organic chemicals based on acetylene at present it would not be advisable to make any provision in our estimates for the likely demand of calcium carbide by the organic chemicals industry. There was also general agreement that even though considerable welding and cutting in future might be done with electricity, the demand for carbide will not be adversely affected and the use of acetylene gas will continue to increase especially when the material becomes freely available at competitive prices from the new larger units to be established in the country. It was, however, urged before us that the present shortage of industrial raw materials, particularly steel, has slowed down the activities of engineering industries in recent months and that this is unlikely to be relieved for some time to come. Accordingly, the demand for calcium carbide is not likely to rise rapidly for another two years or so. After taking into account all relevant factors, we have come to the conclusion that the demand for calcium carbide would be 13,000 tons in 1958 and 14,000 tons in 1959. From 1960, increased quantities of steel are expected to be available through expansion of the existing steel plants and from the new plants which are being erected in the Public Sector. They will encourage, further, the growth of the domestic engineering industry which in turn will stimulate the demand for calcium carbide. We accordingly estimate that the demand will go up to 16,000 tons during 1960 and 18,000 tons in 1961.

* Estimated on the basis of first 10 months' actual which was 6518.8 tons.

7.1.1. Calcium carbide is produced by reacting together quicklime coke and/or charcoal in an electrical furnace at a temperature of about 2000°C. Quicklime is obtained by calcining limestone in a kiln with coke, fuel oil or gas. Birla Jute Manufacturing Co. Ltd., uses coke while Industrial Chemicals Ltd., proposes to use fuel oil and Calico Mills fuel oil and gas generated in the electric furnace. Petroleum coke, though more expensive than coke or charcoal, is used by Birla Jute Manufacturing Co., Ltd., as one of the carbonaceous materials in view of its purity in regard to phosphorus content. Other consumable stores required are electrode paste and mild steel sheets for the manufacture of containers for carbide.

Raw materials, fuel and electrical power

7.1.2. *Limestone*.—Since quicklime for the manufacture of calcium carbide must be of good quality chemically, and also have mechanical strength without tendency to crumble into dust, selection of limestone calls for great care and thoroughness. The representative of the Geological Survey of India present at the public inquiry stated that large deposits of dense and good quality limestone have been found at Sirmoor in Himachal Pradesh, Dehra Dun in U.P., Gotan, Sojat Road and Ghatra in Rajasthan, Marwara and Amhetra in Madhya Pradesh and Kona Rameswaraswami and Kurnool in Andhra. The reserves at these places are estimated to be of the order of 10 million tons. The representative of the West Bengal Government stated that extensive deposits of good quality limestone have been found in Purulia in West Bengal and that further investigations regarding the size of the deposits and the best uses that can be made of it are in progress. Birla Jute Manufacturing Co. Ltd., has stated that it carried out experiments with sea-shells and limestone from Satna, Porbander and Dehra Dun and found them unsuitable. It also undertook surveys in U. P., Bihar and Orissa but did not succeed in locating any source of limestone of the required specifications. It is, therefore, dependent on supplies from Maihar in Madhya Pradesh (about 85 per cent) and Assam (about 15 per cent), which, in its opinion, are best suited for carbide manufacture. Industrial Chemicals Ltd., obtains its limestone from the nearby quarry. This stone is crystalline in structure but the Company's consultants have expressed the view that it would be possible to produce calcium carbide on a commercial scale from this stone. Calico Mills propose to make use of Gotan limestone in their new factory to be established.

7.1.3. *Coke*.—The best coke that is available at present is from the Railway coke plant at Giridih but its composition falls short of the desirable specifications, as indicated below:—

	Desirable specification	Specification of Giridih coke supplied by the Birla Jute Mfg. Co. Ltd.
Moisture and volatiles	1 per cent	3 per cent
Ash	8 per cent	19—24 per cent
Fixed carbon	91 per cent	70—76 per cent
Phosphorus	0.008-0.01 per cent	0.034-0.038 per cent
Sulphur	Traces	0.005 per cent

At the instance of Birla Jute Manufacturing Co., Ltd., the Central Fuel Research Institute examined the possibilities of manufacture of special coke from washed coke to meet the requirements of the calcium carbide industry and succeeded in preparing such coke on a pilot plant scale. We understand that the Durgapur Project Administration has under consideration a scheme for the manufacture of such coke but it is unlikely to materialise in the next three years or so. The calcium carbide industry will, therefore, have to remain dependent for its coke for some time to come on the Railway coke plant at Giridih.

7.1.4. *Charcoal*.—Birla Jute Manufacturing Co. Ltd., obtains its charcoal from Mirzapur in Uttar Pradesh. The quality is inferior and lacks uniformity as the fixed carbon content is reported to vary from 55 to 70 per cent and the phosphorus content from 0.04 to 0.12 per cent. Industrial Chemicals Ltd. has no difficulty in obtaining adequate supplies of charcoal from nearby forests nor does it anticipate any such difficulty in the future. Calico Mills hope to be able to locate sources of good quality charcoal at economic prices.

7.1.5. *Petroleum coke*.—Petroleum coke was used on an experimental scale at the time of the last inquiry but Birla Jute Manufacturing Co., Ltd., has now started employing it regularly in order to bring down the phosphorus content of its carbide. Supplies come entirely from the Refinery at Digboi (Assam) and they are adequate. The company complained of high railway transport charges from Assam to Calcutta.

7.1.6. *Electrode paste*.—Birla Jute Manufacturing Co., Ltd., obtains its requirements from Indian Aluminium Co., Ltd., Alwaye and Aluminium Corporation of India Ltd., Calcutta. The product of the former is reported to be satisfactory but proves to be more costly to the Birlapur factory on account of the longer haul. The present high consumption of electrode paste (134 lbs. per ton of carbide) has been attributed by Birla Jute Manufacturing Co., Ltd., to the design of the furnace and the inferior grade paste supplied by Aluminium Corporation of India Ltd. We understand that the paste prepared by the Corporation is intended for its aluminium plant and is quite suitable for that purpose. It makes available surplus output to the Birlapur factory which, however, needs paste conforming to more rigid specifications. The demand for high grade electrode paste by the calcium carbide industry is bound to increase substantially when the bigger furnaces, which have been licensed, go into production. The ferro-manganese units which are being established in the country will also need electrode paste of the specifications required by the calcium carbide industry. It has not been possible for us to assess the potential demand for high grade electrode paste, but we have no doubt that it will be substantial. We recommend that Government should take early steps to have a careful assessment made of the potential demand for high grade electrode paste and to arrange to establish one or more units to manufacture such paste in the country as quickly as possible.

7.1.7. Containers.—Under the Carbide of Calcium Rules of the Government of India, calcium carbide must be stored in hermetically sealed metal receptacles which should not contain any copper. According to I.S.I. Specification I.S. 1040-1957 the material should be packed in moisture-proof steel containers. While Birla Jute Manufacturing Co. Ltd., has no difficulty in procuring steel sheets for the manufacture of drums, Industrial Chemicals Ltd., has, even for its present small output, been experiencing difficulties in obtaining adequate supplies of sheets regularly.

7.2. Electric power.—Manufacture of calcium carbide consumes a large volume of electrical energy. A ton of carbide requires 3,500 to 4,000 units of electrical energy. Accordingly cheap electric power is the *sine qua non* of economic production of calcium carbide. This explains why Scandinavian countries with abundance of cheap electric power and deposits of suitable limestone have long been the largest producers of carbide. The consumption of energy per ton of carbide at Birla Jute Mfg. Co., Ltd., comes to 4760 KWH (4650 KWH for the furnace plus 110 KWH per ton for tapping electrodes and other ancillary machinery and lighting). The company does not anticipate any saving with its present furnace but expects that when the new bigger cylindrical furnace is installed, its consumption of electricity will go down appreciably. The rate of electricity was 8 pies (about 4 nP.) at the time of the last inquiry but it has gone up to 4.5 nP. per KWH at present. Industrial Chemicals Ltd. Talaiyuthu, obtains electrical energy from the Madras Electricity Department which costs about 4.5 nP. per KWH. That Department has promised to supply the company with additional power when its new plant is installed. The rate of power when purchased in bulk is expected to be 1.9 nP. to 2.8 nP. depending upon offtake. Calico Mills, Chemical Division have also received an assurance of supply of electric power for their carbide unit from Tata Hydro Electric Company. The rate will be about 4 nP. per KWH.

8.1. At the time of the last inquiry (1956) the quality of calcium carbide was judged, in the absence of any specifications laid down by the Indian Standards Institution, in the light of British Standards. Since then, the Indian Standards Institution has published a specification (I.S. 1040-1957) for calcium carbide, Technical. According to this specification, calcium carbide is classified as a temporary measure into two grades, namely Quality A and Quality B. Quality A corresponds to the average quality of the imported material while the requirements prescribed for Quality B represent about the average quality of indigenous material. In fact, Quality B represents a special concession for the present inferior quality of indigenous carbide and the framers of the specification expressed the hope that it might be possible to withdraw

**Standard specifications
for calcium carbide**

it within three years. The statement below describes the principal features of the specification as regards sizes, gas yield and phosphine content of the gas :

1. *Grade Sizes*.—The material should be graded so that the sizes of pieces in a grading are within the following limits :—

mm	mm
1—2	15—25
2—4	25—50
4—7	50—80
7—15	80—120

2. Gas yield in cu. ft. at 27° C. and 760 mm pressure (Tolerance minus 5 per cent)

Sizes	Quality A	Quality B
15—120mm	4.98	4.60
7—15 mm	4.81	4.42
4—7 mm	4.59	4.28

3. Phosphorus compounds (expressed as phosphine) per cent by volume

0.06 0.08

8.2. We observe that Birla Jute Mfg. Co., Ltd., does not adopt the standard size grades laid down in the specification and packs its carbide in the following graded sizes:—

- | | |
|--------------|-------------|
| (a) 4—80 mm | (d) 4—15 mm |
| (b) 25—80 mm | (e) 2—7 mm |
| (c) 15—25 mm | (f) 14 N.D. |

Dissolved acetylene manufacturers have lately been obtaining their supplies in sizes referred to at (a) above while supplies to the market are made in sizes (b) to (d). The sizes at (e) and (f) are special and are supplied only on specific orders. We were informed by the representatives of the company that they had to depart from standard packings in response to definite demands from the trade. But this practice of selling in graded sizes different from those laid down in the specification gives rise to difficulties in determining the quality of the indigenous material and comparing it with the standard specification. It is also, in our view, not conducive to the healthy growth of an infant industry like calcium carbide. If the size grades laid down in the I.S.I. specification referred to above are not wanted by consumers and producers, there is a *prima facie* case for revision of those grades and also for other consequential changes in the specification. We recommend that the industry should take up the matter with the Indian Standards Institution at an early date and ensure that there is no divergence between the specifications of grades in which calcium carbide is marketed and those prescribed in the Indian Standard.

9.1. At the last inquiry the main defects noticed in indigenous calcium carbide were low gas yield, higher phosphine content and lack of uniformity of the product from consignment to consignment. We observed in our report (1956) that there was need for considerable improvement in the quality of calcium carbide produced by Birla Jute Mfg. Co., Ltd., and recommended that the company should take immediate

Quality of the indigenous product

steps to improve and maintain uniformity the quality of its product. We also indicated that in order to implement the above recommendation the company might have to improve or alter its equipment and choose better type of raw materials. In connection with the present inquiry, Birla Jute Mfg. Co., Ltd., has stated that with the help of foreign technicians whose services were obtained by them from time to time several adjustments have been made with a view to improving the operation of the plant. It has installed a separate tapping transformer and carried out certain modifications in the electrical system which have improved heat concentration in the furnace resulting in production of better quality carbide. Arrangements have also been made for flushing carbide bunkers with dry inert gases in order to prevent deterioration of carbide and to reduce formation of dust. In addition, the company has installed a centralised dust exhaust system in carbide bunkers to prevent the dust and fines formed during handling and crushing of carbide being carried along with larger sizes at the time of packing. The company claims that as a result of these measures, the gas yield of its carbide has improved and the phosphine content brought down to the relevant I.S.I. specification. Further the crushing and screening equipment has been improved and with stricter supervision in the packing department the grading of materials has improved.

9.2. The question of quality was discussed at the public inquiry. The consensus of opinion was that the quality of the indigenous product has improved only with reference to acetylene gas yield. Improvement with reference to phosphine content is not appreciable. We have obtained from Birla Jute Mfg. Co., Ltd., data regarding the average gas yields of calcium carbide of different sizes produced in different quarters of 1956-57 and 1957-58 as well as the phosphine content of the gas evolved. They are tabulated below :

Average gas yield of calcium carbide of different sizes produced during the periods April 1956—March 1957 and April 1957—March 1958 (measured at 27°C and under 760 mm pressure)

Period	Gas yields in cu. ft./lb.					PH ₃ contents
	25/80mm	15/25mm	4/15mm	4/80 mm		
1956-57						
April-June 1956 . . .	4.40	4.05	3.75	4.52		0.083
July-September 1956 . .	4.38	3.95	3.63	4.50		0.081
October-December 1956 .	4.49	4.12	3.92	4.55		0.078
January-March 1957 . . .	4.53	4.15	3.95	4.61		0.076
1957-58						
April-June 1957	4.47	3.98	3.76	4.52		0.082
July-September 1957 . .	4.58	4.09	3.89	4.58		0.074
October-December 1957 .	4.62	4.20	4.05	4.65		0.078
January-March 1958 . . .	4.52	4.15	3.99	4.68		0.075

The average analysis of calcium carbide of 25/80 mm produced at the time of the last inquiry was :

Gas yield (in cu. ft. per lb. at 60°F and 30" pressure)	4.36
Phosphine content of the gas	0.08

A comparison of the two sets of figures confirms the general view that there has been some improvement in the gas yield but the phosphine content still continues to be high and fluctuating.

We compare now the quality of the product produced during January-March, 1958 with the standard laid down by the Indian Standards Institution. Since the size grades adopted by Birla Jute Mfg. Co. Ltd. do not correspond to those specified in the Standard, it is not possible to make a straight comparison. The nearest comparable grades to 15-120 mm of the I. S. I. specification are the sizes 25-80 mm and 15-25 mm of the indigenous product. The gas yield of 25-80 mm, which accounts for about 77 per cent of the total output, would not, but for the tolerance allowance, have conformed to the limit prescribed for Quality B. The gas yield of 15-25 mm did not, even with the tolerance, fulfil the standard. The grade sizes 4-15 mm marketed by Birla Jute Mfg. Co. Ltd. can be compared to sizes 4-7 mm and 7-15 mm in the specification and we notice that in their case also the gas yield was lower than the minimum permissible for Quality B.

9.3. After considering the evidence available to us we have come to the conclusion that there has been some improvement in the quality of indigenous calcium carbide but it still falls short of the standard prescribed in the I. S. I. specification. Further efforts should therefore be made to improve the quality of the domestic product and to bring it to the standard of Quality A of I.S.I. specification at an early date. We also take this opportunity to impress on the industry the fact that the prescription of Quality B in 1957 was a special concession for the indigenous carbide industry for a limited period and that at the time of its announcement it was felt that it would be possible to withdraw the concession by 1960. We realise that one of the serious obstacles to achieving radical improvement in the quality of the product of Birla Jute Mfg. Co. Ltd. is the inferior quality of raw materials, namely limestone and coke. The company should, therefore, exercise better quality control over the materials charged in the kiln and the furnace. It might be worthwhile for the company to investigate the potentialities of the newly discovered limestone deposit in Purulia referred to by the representative of West Bengal Government. As regards coke, we expect that the demand for high grade coke will rise considerably in the near future. As stated earlier the capacity of the calcium carbide industry is expected to increase from 4,050 tons at present to 23,200 tons by 1961. Moreover, additional demand for high grade coke will also arise from several ferro-alloy plants, which are expected to be installed during that period. Large scale expansion of the chemical industry is also likely to take place during this period and some of the processes in this industry require high grade coke. At present the only source of supply for superior grade coke is the Railway coke Plant at Giridih but the quality falls short of that required by the

calcium carbide industry. Its capacity is also limited (about 35,000 tons a year). Lest vital industrial development is held up for lack of superior high grade coke, early steps should be taken to establish capacity for its manufacture. We recommend, therefore, that Government should take necessary steps in this behalf at an early date. Until such capacity is established or alternative sources of supply of high grade coke are located, it is important that there should not be any interruption in the supply of coke to the calcium carbide industry from the Railway Coke Plant at Giridih.

10.1. Calcium carbide is classified under serial No. 31 of Part V of the Import Trade Control Schedule. During each of the licensing periods January-June 1956, July-December 1956 and January-June 1957 general and soft currency licences were issued to established importers on the basis of 25 per cent of one-half of their best year's imports. No quota was fixed for establish importers during the quarter July-September 1957. For the licensing period October 1957-March 1958 the quota for established importers was raised to 33-1/3 per cent and this has been repeated during the half-year April-September 1958. As regards actual users, their applications were considered *ad hoc* in consultation with the Development Wing. Dissolved acetylene manufacturers were allowed to import during January-June 1956 one-half of their requirements and were required to obtain the balance from domestic manufacturers. During July-December 1956 the quota for import was raised to three-fourths of actual requirements. During each of the licensing periods, January-June 1957, October 1957-March 1958 and April-September 1958 manufacturers of Dissolved acetylene were required to obtain 150 tons of carbide a month from domestic producers and permitted to import the balance of their requirements.

10.2 Statistics of imports of calcium carbide are published in the Accounts relating to the foreign trade and navigation of India. The quantity and value of imports of carbide during the last three years are given below :

Year	Quantity (in tons)	Value (Rs. in lakhs)
1955-56	7085.15	38.96
1956-57	3976.35	37.29
1957-58 (April-October 1957)	4698.95	29.41

With effect from January 1957, countrywise imports have begun to be recorded in the Monthly Statistics referred to above. The principal sources of imports are Norway, Yugoslavia, China and Canada as will be seen from the following table :—

Imports of calcium carbide for ten months from January to October 1957.

Source	Quantity (in cwt.)	Value (in Rs.)
U. K.	330	9,924
U.S.S.R.	100	2,552
Sweden	1,629	1,35,439
Norway	67,603	23,04,099
Poland	1,412	37,747
West Germany	992	24,325
Netherlands	708	25,870
Belgium	287	7,903
Switzerland	..	21
Italy	288	8,997
Czechoslovakia	3,123	85,632
Yugoslavia	32,560	9,57,992
China	12,407	3,29,685
Canada	8,467	3,21,323
U.S.A.	470	16,535
TOTAL	1,30,376 or 6,518.8 tons	42,68,044

11. Calcium carbide is assessed to duty under item No. 28(33) of the First Schedule to the Indian Customs Tariff. The relevant extract **Existing rate of duty** is given below :—

Item No.	Name of article	Nature of duty	Standard rate of duty	Preferential rate of duty if the article is the produce or manufacture of			Duration of protective rate of duty
				The United Kingdom	British Colony	Burma	
28(33)	Calcium carbide	Protective	50 per cent <i>ad valorem</i>	..	..	..	December 31st, 1958

12. Appendix IV gives C.I.F. prices and landed costs of imported calcium carbide as reported by Collectors of Customs and certain importing firms. The main sources of imports were Norway, Yugoslavia, China and Canada. Chinese imports were the cheapest. Imports from Yugoslavia were cheaper than those from Norway, Canada and other countries but were more expensive than Chinese carbide. These wide variations in C. I. F. prices were discussed at the public inquiry and it was agreed that (1) though the quality of the Chinese material was inferior, its cheapness posed a serious problem to the industry, (2) carbide from Yugoslavia was as good as from other countries, and (3) for purposes of comparison with the fair ex-works price of the indigenous product, prices of imported carbide from

C. I. F. prices and landed cost of imported calcium carbide.

China and Yugoslavia should be taken as the basis. We have accordingly selected the lowest C. I. F. prices of imports from these two countries to measure the quantum of protection needed by the indigenous industry:

Origin of import	Port at which imported	Period when imported	Specification	Per cwt.
				C.I.F. Price
			mm	Rs.
Yugoslavia	Calcutta	November 1957	50-80	28.71
China	Calcutta	December 1957	50-80	26.00

13.1. Our Cost Accounts Officer examined the cost of production of calcium carbide at the factory of Birla Jute Mfg. Co. Ltd. and has submitted to us his cost report. The periods selected for costing were 1956-57 (April 1956—March 1957) and the first ten months of 1957-58. We discussed the cost data with the representatives of the company and in consultation with them have prepared our estimate of their future cost of production and the fair ex-works price of calcium carbide. As the company desired that the details of costs should be kept confidential, we are forwarding the report of the Cost Accounts Officer as a confidential enclosure to this report.

13.2. A comparative statement showing the consumption of raw materials, stores, etc., in 1955, the Commission's estimate in 1956, actual consumption during 1957-58 and our estimate of consumption in the future is given below :

(Per ton of calcium carbide)

Particulars	Actuals	Commis-	Actuals	Estimates
	April/ Sept. 1955	sion's esti- mates for future in 1956	during 10 months ending 31st January, 1958	for future
			Figures in tons unless otherwise stated	
Production (tons)	1586	3225	2987.50	3300
1. Limestone	2.8086	2.7480	2.279	2.272
2. Hard coke for kiln	0.3281	0.2710	0.224	0.220
3. Hard coke for furnace	0.3495	0.3190	0.219	0.210
4. Charcoal for furnace	0.5965	0.6300	0.526	0.520
5. Petroleum coke for furnace	0.0225	..	0.099	0.120
6. Total carbonaceous material for furnace	0.9685	0.9490	0.844	0.850
7. Electrode paste	154 lbs.	130 lbs.	134 lbs.	134 lbs.
8. Electrical energy	4888 KWH	4545 KWH	4696 KWH	4730 KWH

Comparing the actuals of 1957-58 with the estimates made by the Commission in 1956 it is observed that Birla Jute Mfg. Co. Ltd., achieved considerable economies in the consumption of raw materials. However, slight increases were noticeable in the consumption of electrode paste and electrical energy and the reasons therefor have been explained in paragraphs 7.1.6. and 7.2.

13.3 We give below the break-down under main heads, of the actual cost of production and our estimates of the future cost per ton of calcium carbide. For purposes of comparison we have included in the statement the figures adopted at the last inquiry :

Particulars	Actuals (April/ Sept. 1955)	Commis- sion's esti- mate for future in 1956	Actuals during 10 months ending 31st January, 1958	Estimates for future
1	2	3	4	5
Production (tons)	586	3225	2987.50	3300
(i) Raw materials	Rs. 303.70	Rs. 278.85	Rs. 243.45	Rs. 254.06
(ii) Electricity	203.67	189.38	211.34	228.68
(iii) Other conversion charges	153.72	140.59	129.43	157.74
(iv) Depreciation	75.41	74.17	68.18	60.54
(v) Packing	83.24	93.00	80.49	81.30
(vi) Total	819.74	775.99	732.89	782.32
(vii) Less credit for recoveries	20.68	20.00	19.00	17.00
(viii) Net cost of production	799.06	755.99	713.89	765.32
Add adjustments for fines	..	27.62	18.16	21.16
(ix) Net cost for saleable carbide	..	783.61	732.05	786.48
(x) Add for contingencies	..	..	..	10.00
(xi) Add price differential for off-grade carbide	..	..	..	..
(xii) Return	..	106.21	..	20.13
Fair ex-works price of saleable carbide	..	889.82	..	864.61

On the basis of the estimated fair ex-works price of Rs. 864.61 per ton of carbide, the ex-works prices of the several grade sizes which are current in the market have been calculated and are as follows:

	Price per cwt.
	Rs.
25-80 mm	44.75
15-25 mm	41.00
4-15 mm	34.50

In arriving at the above differential prices we have given due consideration to the lower gas yields from, and the railway freight disadvantage of smaller size carbide.

13.4.1. The following factors were taken into account in arriving at the estimate for the future (column 5 of the above table). During the ten months ending 31st January, 1958, for which the actual costs have been determined the furnace worked continuously. The cost of production during the period is, therefore, based on the expenditure spread over the continuous production for 10 months. In estimating costs for future, however, an allowance has to be made for periodic stoppages for the relining of the furnace. On an average, this stoppage will result in curtailment of production by 1 month in a year. The cost of production in future will therefore be higher to some extent, because the expenditure for 12 months will be spread over the production of 11 months.

13.4.2. *Production.*—We have stated in paragraph 9.1 that the company installed in December, 1957 a tapping transformer for improving the operation of the furnace. Subsequent events justified this measure as production during January, 1958 rose to 9.95 tons a day from the average daily production of 9.79 tons in 1957. We understand that the electric furnace, which was relined in 1956, will have to be shut down for about two months towards the end of 1958. Averaging the period of shut down over a period of two years, the period of working of the furnace has been taken as 11 months in a year. We have accordingly estimated an annual production of 3,300 tons based on a daily production of 10 tons over 330 days. Based on past actuals the following break-down into size-grades has been assumed for the future:

25/80 mm	.	.	.	.	.	.	77%
15/25 mm	.	.	.	.	.	.	13%
4/15 mm	.	.	.	.	.	.	7%
2/4 mm	.	.	.	.	.	.	2%
14 ND	.	.	.	.	.	.	1%

13.4.3. *Raw materials.*—There has been a steady rise, after the last inquiry, in the prices of raw materials and in the surcharge of railway freight. But as there has been a saving in consumption, the cost of raw materials estimated for the future has turned out to be lower than in our last estimates. The company has successfully operated with limestone of sizes varying between 2" and 4" and has reduced the percentage of limestone fines from 10 per cent. in 1955 to 4.93 per cent in 1957. The wastage of lime through the formation of fines in the process of handling and crushing also came down from 30 per cent. in 1955 to 21.8 per cent. in 1957. For the purpose of our estimates for the future we have made a provision of 20 per cent. for lime fines and 6 per cent. for limestone fines. We have allowed for the future a higher consumption of petroleum coke in order to enable the firm to bring down the phosphine content of its finished product to well below 0.08 per cent. The latest prices of raw materials have been adopted for purpose of estimating the future costs.

13.4.4. *Electric Power.*—The consumption of electrical energy per ton of carbide has been estimated at 4730 units, which is higher than our estimate in 1956 and actuals in 1957. The higher figure is based on the actual consumption in the past and includes provision for the additional power required by the tapping transformer which was installed in December, 1957. A cess on electricity has come into effect from 1st February, 1958 as notified by the West Bengal Government and this has been included in working out the rate of electrical energy in future.

13.4.5. *Consumable stores, repairs & maintenance.*—Provision has been made for future requirements including (a) cost of relining the furnace and (b) fluctuations, if any, in prices of items like fire-bricks, etc., which have gone up.

13.4.6. *Establishment and other overheads.*—The estimate is based on the actuals for 1957-58 with extras for annual increments, insurance premia for the factory and labour welfare.

13.4.7. *Depreciation.*—Provision for depreciation has been allowed on the written down value at normal rates under the Income-tax Rules, including the second shift allowance.

13.4.8. *Packing.*—Calcium carbide is supplied in 1 cwt. drums to the market and in 2 cwt. drums to dissolved acetylene manufacturers and Government departments. We have assumed for the future that supplies in 1 cwt. and 2 cwt. drums will be in the ratio of 45 to 55.

13.4.9. *Adjustment for carbide fines.*—A margin of 3 per cent. on gross output has been made in future estimates.

13.4.10. *Margin for contingencies.*—During the discussions which we had with the representatives of Birla Jute Mfg. Co. Ltd. the latter raised the question of an adequate contingency allowance per ton of carbide for the purpose of providing for increases in the prices of raw materials and in railway freight and for loss of output due to occasional break-down, etc. It was urged that these factors accounted for 6 per cent. on the cost of production over the past two years and the representatives pressed for a provision of 3 per cent. on the cost of production. We have given the matter our careful consideration and have added a sum of Rs. 10 per ton to the works cost for the purpose of covering marginal increases in cost arising from the above factors.

13.4.11. *Return on capital.*—In our last report (1956) we assessed the quantum of protection needed by the indigenous industry on the basis of the prime cost of production of calcium carbide by Birla Jute Mfg. Co. Ltd. plus overheads, depreciation and interest on working capital. No return on the block was allowed on the ground that the unit was considered to be a very high cost one. Our present investigation covers, as indicated in paragraph 2, not only a review of the scheme of protection granted to the industry but also the determination of fair ex-works price of calcium carbide produced by Birla Jute Manufacturing Co. Ltd. The company has achieved some economies in cost of production and has embarked on a project of expansion of the existing

factory. We are therefore, inclined to the view that having regard to all these factors, it is fair that return on capital should be provided for. After considering all aspects of the case we have decided to allow profit at the rate of 8 per cent. on the capital employed, as the unit continues to be a high cost one.

13.5.1. In our last report we examined the estimate of cost of production in future at Birla Jute Mfg. Co. Ltd., and the estimates of cost of production furnished by two prospective producers at that time, namely, Travancore-Cochin Chemicals Ltd. and Travancore Electro Chemicals Industries Ltd., and reached the conclusions that (a) the calcium carbide plant of Birla Jute Mfg. Co. Ltd. was disadvantageously placed in most respects such as, high cost of power, small size, defective design of the unit and improper type of equipment, etc., and (b) locations were available in the country where the production of calcium carbide could be undertaken at considerably lower costs. We also expressed the view that the equipment of Birla Jute Mfg. Co. Ltd., was operationally restrictive in scope because (i) the vertical kiln limited the choice of the types of limestone which could be used, and (ii) the open type stationary rectangular furnace with electrodes set in a line had little to commend for itself. On the basis of the information then available to us we indicated that the unit could have operated more economically and with greater efficiency if it had installed a horizontal rotary kiln and a cylindrical rotary furnace. Finally, our conclusion was that the carbide plant at Birlapur was not sufficiently representative of the indigenous calcium carbide industry to justify acceptance of the estimated fair ex-works price of its product as basis for assessing the quantum of protection needed by the industry.

13.5.2. The company has admitted that the present unit on account of its small size is uneconomic and that the rectangular furnace is not satisfactory. It has already decided to increase its capacity and has applied for the import of a 4800 KVA cylindrical stationary furnace. Meanwhile, it has carried out several adjustments in its present furnace with a view to improving its operational efficiency. As regards kiln, the company is of the view that a vertical kiln is not operationally restrictive and has claimed that subsequent to the last inquiry it has been operating its kiln successfully with smaller pieces of limestones down to 2". We observe that the other carbide units which have been licensed have all ordered vertical shaft kilns. As regards the rotary furnace, the representatives of Birla Jute Mfg. Co. Ltd. stated that they had gone into this question very carefully in consultation with well-known manufacturers and were convinced that a rotary furnace of less than 5,000 KVA would not be as satisfactory and economical as a stationary cylindrical furnace of the type selected by them. We notice that both Birla Jute Mfg. Co. Ltd., and Indian Carbide Corporation Private Ltd., have ordered stationary open furnaces. Industrial Chemicals Ltd., has placed orders for an open rotating furnace while Calico Mills, Chemicals Division intend to instal a closed rotating furnace, as theirs will be an integrated plant and they propose to use hot gases from the electric furnace in other sections of their plant. Birlas, Industrial Chemicals and Calico Mills will obtain their furnaces from the

same manufacturer (Elektrokemisk A/S of Norway) and after these furnaces have been installed and have gone into production, we may have some useful technical data for determining the relative advantages and disadvantages of rotating and stationary furnaces in Indian conditions.

13.5.3. The locational disadvantages of the Birlapur unit which we referred to in our last report are still reflected in its high manufacturing costs. But as other units which are expected to go into production are not yet in a position to provide reliable cost data, no fresh observations are possible at present in this regard. It may, however, be stated that from the point of view of freight (on the finished product) and convenience of supply to consumers, 45 per cent. of whom are under present pattern of demand, located in the Eastern Zone, the Birlapur unit will have an advantage over other units for some time to come.

13.5.4. The issue whether the Birlapur unit is representative of the industry is not of importance at present because it is the only unit producing sizable quantities of calcium carbide, the decision has been taken to maintain its constructive role in supplying a portion of the country's need for calcium carbide, and it has also been allowed to expand its production. Our present scheme of protection is being formulated in the context of the existing situation and we are unable to anticipate any fresh conclusions in this regard until fresh reliable data are available, which will be only after other units go into full production.

14. Since C.I.F. prices of 50-80 mm. grade of calcium carbide imported from Yugoslavia and China are available, we have adopted for

Comparison of fair ex-works price of indigenous calcium carbide with landed cost of the imported product.

comparison the fair ex-works price of 25-80 mm indigenous carbide which is the nearest comparable grade.

The statement below gives the result of comparison :—

	Imports from	
	Yugoslavia	China
	Rs. per cwt.	
1. C.i.f. price of the imported product	28.71	26.00
2. Clearing charges	0.90	0.90
3. Landed cost ex-duty of the imported product	29.61	26.90
4. Fair ex-works price of indigenous product	44.75	44.75
5. Excess of fair ex-works price of indigenous product over landed cost ex-duty of imported product (4—3)	15.14	17.85
6. Percentage of Nos. 5 to 1	52.73	68.65

The above table would indicate that the customs duties required to equate the fair ex-works price of indigenous calcium carbide with the landed costs ex-duty of imported product come to 53 per cent. or 69 per cent. *ad valorem* according as the import comes from Yugoslavia or China. The current rate of protective duty is 50 per cent. *ad valorem*.

15.1 On the last occasion we recommended protection to the domestic industry in view of its importance to the national interests. That consideration still prevails. The calcium carbide industry is still in its infancy. The process of manufacture is difficult and involves some amount of hazard. Nevertheless the industry has been able to establish the process and to train a nucleus of staff in the technique of production. The quality of the product, though inferior to that of the imported material, has been found to be acceptable. Birla Jute Mfg. Co. Ltd. has made efforts to improve the quality of its products and has plans for investing additional capital of the order of Rs. 26 to Rs. 27 lakhs on replacement and expansion. A few other units have obtained licences for undertaking the manufacture of calcium carbide and are prepared to invest large sums of money. It is therefore essential that protection should be continued beyond 31st December 1958.

Measure of protection.

15.2 It will be seen from paragraph 14 that the protective duties indicated range from 53 per cent. *ad valorem* to 69 per cent. *ad valorem*. The domestic industry, however, enjoys certain advantages as regards disposal of its product. Dissolved acetylene manufacturers are required to buy one-half of its total output: the balance is sold in an expanding domestic market effectively insulated by import trade control from competition for abroad. This is evident from the fact that the unsold stock with Birla Jute Mfg. Co. Ltd. at the end of 1957 was equivalent to just a fortnight's production. In the circumstances an increase of duty over the current level is not called for. The new units are expected to go into production by the end of 1960 or early in 1961 and since at least one year must elapse before the pattern of production and costs are stabilised, we recommend that protection to the industry should be extended for a further period of three years, that is, till 31st December 1961 at the existing rate of protective duty.

16.1 Birla Jute Mfg. Co. Ltd. sells its carbide direct to dissolved acetylene manufacturers at ex-factory selling prices—the responsibility for transport of the material from the factory at Birlapur to the buyers' godown at Calcutta or elsewhere being the buyers'. Sales to the market are made through its accredited Agents. For this purpose the company has divided the country into five regions and has appointed one sole selling Agent for each region. The names and

Selling system. }

addresses of these agents and the areas allotted to each are stated below :—

Name and address	Areas attached
1. Messrs. K. C. Dey and Sons (Calcium Carbide Department), 161/1, Mahatma Gandhi Road, Calcutta-7.	West Bengal, Assam, Bihar and Orissa, Tripura and Manipur.
2. Messrs. Shree Guru Nanak Agencies , 52/43, New Dal Mandi, Kanpur.	Uttar Pradesh.
3. Messrs. Rama Paint Mart , 99, Katra Barian, Fatehpuri, Delhi-6.	Delhi State, Punjab, Rajasthan, Himachal Pradesh and Kashmir.
4. Messrs. Vasantrai Goverdhan Das & Bros. , Patharia Palace, 75, Maohammedali Road, Bombay-3.	Bombay and Madhya Pradesh.
5. Messrs. Sridhar & Co. , Mount Road, Madras.	Madras, Andhra, Mysore and Kerala.

Transport from the factory to the godown of the Calcutta Agents is provided by either the Company or the Agent and the charges vary between Rs. 8 and Rs. 10 per ton. As regards outstation agents, Birla Jute Manufacturing Co. Ltd., charges Rs. 0.75 per cwt. to cover the cost of transport of the material from the factory to Howrah and the handling charges at Howrah Station. The outstation agent has also to pay the railway freight from Howrah and the handling charges at the destination station plus cartage from the station to his godown and octroi and such other municipal charges as are payable. The selling prices of these Agents in the whole-sale market are the sum-total of (a) ex-factory selling price, (b) cost of transport from the factory to the agent's godown (inclusive of handling and octroi charges), and (c) commission payable to the agent. The representatives of Birla Jute Mfg. Co., Ltd., assured us that the company maintains a close watch over the selling prices of its agents and does not allow them to charge prices in excess of what is admissible under the formula referred to above. They also stated that in order to prevent any exploitation of the ultimate consumer in times of scarcity the company allows its agents to sell on occasions small quantities in retail but care is taken to ensure that the usual channel of distribution is not disturbed.

16.2. We observe that the rates of commission which were Rs. 3 per drum of 1 cwt. for outstation agents and Rs. 2 for the Calcutta agent have been raised by the Company with effect from 1st September 1957 to Rs. 4 per drum of 1 cwt. for outstation agents and Rs. 5 per drum of 1 cwt. for the Calcutta Agent. The current rates work out to be about 9 per cent. on fair ex-works price for outstation agents and about 11.6 per cent. for the Calcutta agents. The representatives of Birla Jute Mfg. Co., Ltd., urged that the normal rates of commission in the Chemical Industry being 10 per cent. on cost, the rates allowed by them were not excessive. They also stated that a higher rate has been fixed for the Calcutta agent as compensation for surrendering his quota as established importer of carbide. A selling agent is normally expected to take active steps to popularise the product of his principal

through personal propaganda or advertisement. He has an uphill work in the initial two or three years in introducing the product of his principal but after the product has established itself, his responsibilities become comparatively easy. The product of Birla Jute Mfg. Co., Ltd., has been accepted in the market and its demand is rising. As a result of the measures taken by Government, the Company has to make no efforts to sell one-half of its output to dissolved acetylene manufacturers. Disposal of the balance does not, in our view, present any problem to either the company or its agents. In the circumstances we feel that the fixation of a higher rate of commission in September 1957 was not in keeping with Government's appeal to the industry to hold the price line in check. The representatives of the industry saw the force of the argument and said that they would consider the matter. We suggest that the Company should give the matter its careful consideration and effect such reduction in the rates of commission as is feasible.

16.3. *Industrial Chemicals Ltd.*—The output being small, the company has not made any elaborate organisation for marketing its product. It sells its carbide direct to Kolar Gold Fields, the Krishnappa Asbestos Mines and the Periyar Project. Any surplus that is left over after meeting the requirements of these three consumers is sold through Binny & Co., (Madras) Ltd., on a commission of $7\frac{1}{2}$ per cent. on the agreed price.

17.1. *Restriction on imports from China.*—The representatives of Birla Jute Mfg., Co., Ltd., stated that China had of late been exporting to India calcium carbide which was inferior to Quality B of I.S.I. Specification No. IS: 1040-1957 at very low prices and that such imports in recent months had constituted serious threat to the domestic industry. They suggested that imports of carbide, which are at present allowed on value basis, should in future be licensed on the basis of quantity. As regards this suggestion, the consensus of opinion at the public inquiry was that (i) calcium carbide was at present in short supply, (ii) importers were exploiting the market by charging prices out of relation to the landed cost of the material, and (iii) the threat of Chinese competition had been exaggerated. We are inclined to share this view: in any case the disposal of indigenous carbide has ceased to be a problem and if the industry takes energetic steps to improve the quality of its products, we are certain that it will have no difficulty in selling its product in the future in an expanding domestic market which is sheltered by import restrictions. Further, we obtained information about the landed cost and selling prices from a number of importers. None of them maintain any price lists and they fix their selling prices from time to time depending on market fluctuations. We observed that in the case of low priced imports from China and Yugoslavia, the margin of difference between selling prices and landed costs was very high. Any restriction on imports at this juncture would merely swell the profit margin of importers further. We are therefore unable to support the suggestion of Birla Jute Mfg. Co., Ltd.

Other recommendations

17.2. *Transport difficulties.*—The representatives of Birla Jute Mfg. Co., Ltd., complained of difficulties in obtaining railway wagons for movement of limestone from Maihar and charcoal from Mirzapur and pressed for priority movement on a quota basis on the lines of the arrangements in vogue for the sugar industry. We have advised them to place the matter before the Development Wing and, in consultation with the latter, take it up with the Railway administrations concerned.

17.3. *Freight for Petroleum coke.*—Birla Jute Mfg. Co. Ltd., also complained of high railway freight on Petroleum coke as a result of its classification in Class I. We have been informed by the Ministry of Railways (Railway Board) that the matter is under consideration by the Railway Rates Tribunal on a complaint filed by Aluminium Corporation of India Ltd.

PART II

FAIR EX-WORKS SELLING PRICE OF CALCIUM CARBIDE MANUFACTURED BY BIRLA JUTE MFG. CO. LTD., CALCUTTA

18. At present there are two producers of calcium carbide in the country, namely, Birla Jute Mfg. Co., Ltd., and Industrial Chemicals Ltd. The latter produces the material in a pilot plant and its output is of the order of 200 tons a year. No control, formal or informal, is exercised by Government over its selling prices. Control has been exercised informally over the prices of calcium carbide manufactured by Birla Jute Mfg., Co., Ltd., prior to the first inquiry into this industry in 1956.

Introduction

19.1. In August 1955 dissolve acetylene manufacturers were directed by Government to purchase one-third of their requirements of calcium carbide from domestic producers. Birla Jute Manufacturing Co., Ltd., on its part undertook to maintain the following prices for its product:—

Size	Price per cwt.
25/80 mm	Rs. 43
15/25 mm	38
2/15 mm	36

A year later, that is, in August 1956 the Company approached Government for permission to raise the price of calcium carbide to the following level:—

Size	Price per cwt.
25/80 mm	Rs. 45
15/25 mm	38
7/15 mm	34

These prices were to apply to sales to dissolved acetylene manufacturers as well as to the market. Government did not agree to the price of 25/80 mm grade being raised from Rs. 43 to Rs. 45 per cwt. as they felt that the higher price proposed would have adverse effect on the production and offtake of acetylene gas; they, however, informed the company that they would have no objection if the price was fixed at Rs. 44 per cwt. As regards smaller sizes (7/15 mm), Government left it to the company to fix the price at either Rs. 35 or Rs. 34 per cwt. Eventually the prices of calcium carbide were notified by the company at the following rates with effect from 1st September, 1956:

Size	Price for D.A. gas manufacturers per cwt.	Price for market. per cwt.
	Rs.	Rs.
25/80 mm	44	48
15/25 mm	42	44
7/15 mm	33	30

Thus a system of differential prices was introduced and prices for dissolved acetylene manufacturers were fixed at a lower level than those for the market. The selling price of bigger sized carbide for sale in the market was fixed at a higher level than was agreed to by Government generally while that of smaller sized carbide (7/15 mm) reduced to a lower level than was then current because according to the Company a higher discount was necessary to make the small sized carbide (of which it was holding excessive stocks at that time) saleable. The Company, however, gave an assurance to the effect that it would review its price structure after its stocks had gone down to the normal level and revise the prices, if necessary.

19.2. In January 1957 the Company approached Government for permission to raise the selling price of carbide from Rs. 44 to Rs. 47·50 per cwt. on the grounds that (a) the fair ex-works price had been estimated by the Commission in 1956 at Rs. 909·82 per ton (Rs. 45·50 per cwt. approx.) and (b) subsequently there had been rises in Railway freight and prices of raw materials and stores, particularly coal and steel, and labour charges. This was not acceded to and the Company was told that the Commission's estimates were not intended for fixation of prices. In July 1957 Birla Jute Mfg. Co., Ltd., informed Government of its intention to raise with effect from 1st September 1957 its selling prices for the market as indicated in the statement below. It explained that this step had become necessary for meeting increases in the cost of production and added that there would be no change in its selling prices for dissolved acetylene manufacturers.

Size	Existing price per cwt.	Proposed price per cwt.
	Rs.	Rs.
25/80 mm	48	52
15/25 mm	44	48
4/15 mm	30	36

The revised prices were given effect to on 1st September 1957 but were later withdrawn at the instance of Government from 15th November 1957.

20.1. In terms of the letter of the Government of India in the Ministry of Commerce and Industry No. HC-2(4)/57 dated 2nd/7th January 1958, the Commission is required to examine and report whether the prices as originally approved by Government needed revision and if so, to what extent. For the purpose of the present inquiry we have taken into account the prices of Birla Jute Mfg. Co., Ltd., which were brought into effect by the Company with effect from 1st September 1956 and are currently in force, namely :—

Size	Price for D.A. gas manufacturers per cwt.	Price for the market per cwt.
	Rs.	Rs.
25/80 mm	44	48
15/25 mm	42	44
4/15 mm	33	30

In addition, calcium carbide in sizes 4/80 mm is supplied to D.A. producers at a price of Rs. 42.75 per cwt. and a rebate of Re. 0.37 per cwt. is allowed if supplies are made in 2 cwt. drums.

20.2. We have not examined the selling price of calcium carbide produced by Industrial Chemicals Ltd., as it has not been referred to us.

21.1. In paragraph 13, we have estimated the fair ex-works price of calcium carbide produced by Birla Jute Mfg. Co., Ltd., for the period 1958—60 at Rs. 864.61 per ton or Rs. 43.23 per cwt. The representatives of Birla Jute Mfg. Co., Ltd., suggested that the following items which had not been included in the above estimate (which was intended for determining the quantum of protection) should be provided for in the fair ex-works selling price, that is, the price at which the company would be required to sell its product:

1. Bonus to workers equivalent to one month's wages.
2. Provision for rebate allowed to customers obtaining supplies in 2 cwt. drums (About Re. 1 per drum).
3. Rent of accommodation for its staff at 8, India Exchange Place, Calcutta (About Rs. 700 per month).

21.2. We have examined this claim keeping in view the considerations that the price of indigenous calcium carbide to the consumers is already high and should not be increased as far as possible, and

secondly, that the calcium carbide plant is a part of Birla Jute Mfg. Co., Ltd., which is a well-established concern, and any advantage derived from such association should continue to be available to the calcium carbide unit until it is able to achieve substantial economy in its cost of production. The bonus to workers has not actually been paid but may have to be paid in future. In any case, it is not production bonus and the provision for it should, therefore, come out of the profits of the Company. The Company has been supplying calcium carbide in 1 cwt. drums and 2 cwt. drums. Prices are fixed for 1 cwt. drums and a rebate is allowed when supplies are made in 2 cwt. drums. We have examined the cost of packing of calcium carbide in these two sizes and have found that the Company has been making a saving in effecting supplies in 2 cwt. drums because the rebate allowed is somewhat less than the difference in packing costs between the two sizes. The claim of the company is, therefore, not tenable. We have recommended different prices for the two packings keeping in view the saving available to the company from the bigger packing. The rent of accommodation occupied by the staff of the calcium carbide plant at the Head Office has been estimated at Rs. 700 per month based on the area occupied. Birla Jute Mfg. Co., Ltd., however, had not so long recovered any rent from the calcium carbide section. We consider that this position should continue for reasons stated earlier. As a result, no provision has been made for any of the three items in determining the selling price at which the product should be sold.

21.3. Mention has been made in paragraph 8.2. that the Company packs its output in five graded sizes, namely (a) 25/80 mm, (b) 15/25 mm, (c) 4/15 mm, (d) 2/7 mm, and (e) 14 ND. In addition a special grade, namely 4/80 mm is supplied to D.A. producers. Based on the actual output during the past two years we have assumed for the period 1958—1960, the following pattern of production for those sizes:

25/80 mm	77 per cent.
15/25 mm	13 „ „
4/15 mm	7 „ „
2/7 mm	2 „ „
14 ND	1 „ „

14 ND is a special size which is produced against specific orders, and its price is negotiated with the buyer in each case. 2/7 mm size is fine material and has to be disposed of at lower prices depending on market conditions. Its output as well as its demand are much too small for a price to be fixed. Prices are then required to be fixed for (a) 4/80 mm, (b) 25/80 mm, (c) 15/25 mm, and (d) 4/15 mm. dissolved acetylene manufacturers now obtain nearly 90 per cent. of their requirements in 4/80 mm packing and the balance in 25/80 mm packing. Accordingly such quantities of 15/25 mm and 4/15 mm grades as are not supplied in 4/80 mm packings for dissolved acetylene manufacturers have to be disposed of in the open market. The gas yield from such material is lower and handling losses and transport cost are

higher. Accordingly lower prices have to be fixed for these grades in order to make them saleable. At present the margin of difference between the prices for the market of 25/80 mm and 15/25 mm is Rs. 4 per cwt. and that between 25/80 mm and 4/15 mm, Rs. 18 per cwt. The representatives of the Company suggested that the margin of difference between the prices of 25/80 mm and 4/15 mm could be reduced to Rs. 16 per cwt. The decision of dissolved acetylene manufacturers to obtain the bulk of their requirements in 4/80 mm packing has solved the problem of disposal of 4/15 mm to a very large extent. After careful consideration of all relevant factors, we have reached the conclusion that a margin of Rs. 10.50 per cwt. between the prices of 25/80 mm and 4/15 mm would be adequate for stimulating the sale of 4/15 mm grade size and have made the necessary provision in our recommendations in paragraph 21.5. below.

21.4. We have stated in paragraph 19.1. that Birla Jute Mfg. Co. Ltd., introduced from 1st September 1956 differential prices for its carbide in respect of sales to dissolved acetylene manufacturers and to the market-prices for the former being lower. The apparent reason for lower prices for dissolved acetylene manufacturers was that they were obtaining their supplies in bulk and regularly at a time when there was considerable prejudice in the market against the indigenous product. The question of maintaining differential rates was discussed at the public inquiry. The representatives present were unanimous that since the difficulties of disposal of indigenous carbide had ceased to exist it was no longer necessary to continue the preferential treatment for dissolved acetylene manufacturers. We have also carefully considered the matter. The number of dissolved acetylene manufacturers has increased to 4 and some of them are also established importers of carbide and sell both carbide and acetylene gas in the market. The possibility of some quantity of cheaper indigenous carbide finding its way in the market and being sold at higher prices cannot be ruled out entirely. After taking into account all relevant factors we are satisfied that the system of differential prices between the two classes of consumers is no longer necessary. We recommend, therefore, that it should be abolished forthwith and that there should be one uniform price ex-factory.

21.5. It will be seen from paragraph 13 that we have estimated the fair ex-works price of calcium carbide produced by Birla Jute Manufacturing Co., Ltd., at 864.61 per ton or Rs. 43.23 per cwt. On this basis the ex-works prices of the several grade sizes, in which the company markets its carbide, were calculated as follows:—

Size	Per cwt.
	Rs.
25/80 mm	44.75
15/25 mm	41.00
4/15 mm	34.50

Since the company sells its product in 1 cwt. and 2 cwt. drums and has also introduced another grade-size (4/80 mm) for dissolved acetylene manufacturers, we have calculated the differential prices for the

several grade sizes in vogue in 1 cwt. and 2 cwt. packing with due regard to the considerations mentioned in paragraph 13.3. and the saving from larger packing (2 cwt. drums). The fraction in the price has been rounded off in each case to the nearest quarter of a rupee. The prices arrived at by us are as follows :—

<u>Size</u>	<u>1 cwt packing</u>	<u>2 cwt. packing</u>
	<u>Rs.</u>	<u>Rs.</u>
4/80 mm	43.50	43.00
25/80 mm	45.50	44.25
15/25 mm	41.50	40.50
4/15 mm	35.00	34.00

We recommend that these prices should be fixed as the fair ex-works selling prices of calcium carbide produced by Birla Jute Manufacturing Co., Ltd. They are exclusive of charges such as transportation and handling from the factory, local taxes, if any, and selling commission payable to selling agents. We also recommend that these prices should hold good upto the end of 1960. Any unforeseen increases in labour charges, cost of raw materials and stores, etc. in the future should come from the margin for contingencies provided for in our estimates of fair ex-works price and should not be the basis of a claim by the company for increased prices. The next review should take place at the beginning of 1961.

21.6. It is, however, necessary to add a caveat here. The company has gone in for large scale expansion of its capacity and expects that its cost of production will go down appreciably after its new furnace and additional equipment have been commissioned. If this development eventuates before the end of 1960, a review of the cost of production should be held earlier than the date indicated in the foregoing paragraph.

22. The prices recommended by us are lower than current prices for sales to the market and will therefore benefit the consumers who produce their own acetylene gas for welding and cutting. They are, however, higher than the prices at which dissolved acetylene manufacturers obtain their supplies and the difference works out to an average of 0.62 per cwt. or Rs. 12.40 per ton. According to Indian Oxygen and Acetylene Co., Private Ltd., the gas yield from 1 lb., of indigenous carbide comes to about 4.5 cu. ft. or 10,000 cu. ft. from 1 ton of carbide. Thus the incidence of increase for 1,000 cu. ft. of gas will be Rs. 1.24 if the Company uses indigenous carbide alone. Since, however, dissolved acetylene manufacturers obtain about one-third of their requirements of carbide from domestic producers, the actual incidence should not be higher than Rs. 0.41 per 1,000 cu. ft. gas. We have examined whether the additional burden due to the increase in price recommended by us is excessive for the producers of dissolved acetylene. Indian Oxygen &

Acetylene Co. Private Ltd. which is the largest producer in this line, consumes nearly 80 per cent. of the indigenous carbide earmarked for dissolved acetylene manufacturers. The additional burden due to the increase in the price recommended by us will, so far as this company is concerned, be of the order of Rs. 20,000 per annum based on its consumption of calcium carbide during each of the years 1956 and 1957. The Company has informed us that it has different prices for different customers depending on the level of consumption, etc., and that they range from Rs. 145 per 1000 cu. ft. gas and upwards and the average sales value realised during the quarter ended 31st December 1957 came to Rs. 192 per 1000 cu. ft. gas. It is observed that the increase of Rs. 0.41 per 1000 cu. ft. gas constitutes only 0.21 per cent of the sales value. We have also examined the Company's Balance Sheets and Profit and Loss Account for the three years ended 30th September 1957 and we find that the additional burden of Rs. 20,000 per annum will be insignificant when compared to the annual net profit earned by the company. We are convinced that it should be possible for the company to absorb the slight increase in the price of dissolved acetylene. Similar information from other dissolved acetylene producers was not available but we have no reason to believe that their practice and experience will be materially different.

23. Commission's conclusions and recommendations are summarised below:—
Summary of conclusion and recommendations

PART I

1. The effective annual rated capacity has gone down from 5,050 tons to 4,050 tons. If the Birla Jute Manufacturing Co. Ltd., the Industrial Chemicals and Calico Mills (Chemical Division) succeed in erecting their plants according to their respective plans, the effective annual capacity would rise to 23,200 tons by the end of 1960.

[Paragraphs 5.1.3. & 5.3.]

2. The production of calcium carbide was 2,889.50 tons in 1956, 3,596 tons in 1957 and 607.20 tons in January-February, 1958.

[Paragraph 5.1.4.]

3. The domestic demand of calcium carbide has been estimated at 13,000 tons in 1958, 14,000 tons in 1959, 16,000 tons in 1960 and 18,000 tons in 1961.

[Paragraphs 6.5 & 6.6.]

4. Government should take early steps to have a careful assessment made of the demand of high grade electrode paste and to arrange to establish one or more units to manufacture such paste in the country as quickly as possible.

[Paragraph 7.1.6.]

5. The industry should take up with the Indian Standards Institution the question of the revision of those grade sizes which are not wanted by the consumers, and ensure that there is no divergence between the specifications of grade sizes in which calcium carbide is marketed and those prescribed in the Indian Standard.

[Paragraph 8.2.]

6. There has been some improvement in the quality of calcium carbide but still it falls short of the specifications prescribed by the Indian Standards Institution. Efforts should be made to improve the quality of the domestic products to bring them to the standard quality 'A' of the I.S.I. specification.

[Paragraph 9.3.]

7. One of the serious obstacles to achieve radical improvement in the quality of calcium carbide produced by Birla Jute Manufacturing Co. Ltd., is the inferior quality of raw materials, namely, limestone and coke. The company should; therefore, exercise better quality control for the materials charged in the kiln and the furnace.

[Paragraph 9.3.]

8. Government should take necessary steps at an early date to establish capacity for the manufacture of superior high grade coke. Until such capacity is established and/or alternative source of supply of high grade coke is located, it is important that there should not be any restriction on the supply of coal to the calcium carbide industry from the Railway coke plant at Giridih.

[Paragraph 9.3.]

9. Protection to the industry should be extended for a further period of three years beyond 31st December, 1958 at the existing rate of protective duty.

[Paragraph 15.2.]

PART II

10. The system of differential prices between the two classes of consumers, namely, dissolved acetylene manufacturers and others should be abolished forthwith.

[Paragraph 21.4.]

11. The fair ex-works selling prices of different grades of calcium carbide should be fixed as given in paragraph 21.5 and should hold good up to the end of 1960.

[Paragraph 21.5.]

12. Next review should take place at the beginning of 1961. Birla Jute Manufacturing Co. Ltd., expects that its cost of production will go down appreciably after a new furnace and additional equipment have been commissioned. If this development takes place before the end of 1961, a review of cost of production should be held earlier.

[Paragraphs 21.5 & 21.6.]

24. We wish to express our thanks to the producers, importers and consumers who furnished us with valuable information in connection with this inquiry and whose representatives gave evidence before us.

Acknowledgments

Shri K. R. Damle, Chairman, served on this panel till 14th April, 1958 on which date he relinquished charge of his post.

C. RAMASUBBAN,
Chairman.

S. K. MURANJAN,
Member.

J. N. DUTTA,
Member.

R. S. BHATT,
Member.

RAMA VARMA,
Secretary.

BOMBAY,

Dated 24th May, 1958.





सत्यमेव जयते

APPENDIX I
[Vide Paragraph 2.1.]

No. HC-2(4)/57

GOVERNMENT OF INDIA

MINISTRY OF COMMERCE AND INDUSTRY

New Delhi, the 2nd/7th January, 1958.

FROM

Shri M. C. MISRA,
UNDER SECRETARY TO THE GOVT. OF INDIA.

TO

THE SECRETARY,
TARIFF COMMISSION,
BOMBAY-1.

SUB:—Revision of the ex-works and selling price of calcium carbide.

SIR,

I am directed to say that the Tariff Commission in 1956 in their Report on the grant of protection to the calcium carbide industry estimated the price based on actual operation submitted by the firm for six months period ending September, 1955 and also made an estimate of the future price based on continuous operation at full rated capacity. In assessing this price, the consumption rate of the raw materials and the prices of the raw materials were assumed on the basis given by M/s. Birla Jute and adequate provision was made for the anticipated increase in the price of steel, labour and supervision charges. The Commission recommended a protective import duty of only 45% *ad valorem* and wanted that the fair selling price should be reduced *pro rata*. However, the Government retained the duty at the 50% *ad valorem* level as already done before and converted this to a protective duty. The price structure was also not changed. This was the position up to June, 1956 and the company was also assisted in selling their product at Rs. 43 per cwt. ex-works to actual users and was enjoying a protective duty of 50% *ad valorem*. In August, 1956, the firm approached the Government for permission to increase the price of their carbide from Rs. 43 to Rs. 45 per cwt. ex-works for sales to the market and not to the Dissolved Acetylene manufacturers. This Ministry sanctioned an increase by only Re. 1 per cwt. bringing the price to Rs. 44 per cwt. ex-works. Although this increased price was not to be charged to the Dissolved Acetylene manufacturers, it was observed that in practice the total price of the carbide inclusive of all grades was raised to all types of customers including the manufacturers of dissolved acetylene gases by Re. 1 per cwt. It may further be added that while the dissolved acetylene manufacturers obtained their supplies at the specified price direct from the factory, other consumers have to purchase their requirements from the selling agents of M/s. Birla Jute at a premium of Rs. 4 per cwt. (Rs. 2 sales' commission and Rs. 2 transport charges.)

M/s. Birla Jute Manufacturing Co. Limited, in their letter dated the 14th January (copy enclosed) stated that their cost of production has increased by Rs. 39.9 per ton or Rs. 1.99 per cwt. due to various increases in (1) price of coke, (2) railway freight, (3) price of coal, (4) price of steel, (5) wages of labour, (6) cost of packing drums, and (7) the price of steel for miscellaneous stores. The firm therefore requested for an increase from Rs. 44 to Rs. 47/8/- per cwt. so as to cover these increases and to bring the production cost of Rs. 909/13/- per ton ex-works as given in the Tariff Commission Report. After careful consideration of their request the firm was informed on the 16th July, 1957 that the Government could not agree to any increase in the selling price of calcium carbide. M/s. Birla Jute Manufacturing Co. Limited, however, intimated on the 24th September, 1957 (copy enclosed) that they had increased the price to Rs. 52 per drum of 50 kgm. ex-factory with effect from 1st September, 1957, on the ground that there had been substantial increase in their cost of production. The firm was asked to reduce the price of the calcium carbide to its original level before their request could be referred to the Tariff Commission for examination and report as to whether the price as originally approved by the Government of India needs revision and if so, to what extent.

The firm have now informed in their letter dated the 2nd November, 1957 that they have reduced their prices to the original level with effect from the 15th November, 1957 i.e., their ex-factory selling prices of carbide for the market. Their current prices are follows:—

25/80 mm Rs. 48/-per cwt.

15/25 mm Rs. 44/-per cwt.

4/15 mm Rs. 30/-per cwt.

I am to request the Tariff Commission under Section 12(d) of the Tariff Commission Act, 1951 to examine and report as to whether the price as originally approved by the Government of India needs revision and if so, to what extent.

Yours faithfully,

(Sd/.) M. C. MISRA,

Under Secretary to the Government of India.



APPENDIX II

[Vide paragraph 3.1]

List of persons or bodies to whom the Commission's questionnaires or letters were issued and from whom replies or letters were issued and from whom replies or memoranda were received.

*Indicates those who have replied or sent memoranda.

(A) PRODUCERS:

- *1. Birla Jute Manufacturing Co. Ltd., 8, India Exchange Place, Calcutta-1.
- *2. Industrial Chemicals Ltd., 21, Maharajah Surya Rao Road, Madras-18.
- *3. Travancore Electro-Chemical Industries Ltd., Chingavanam, Kottayam, Kerala State.
- *4. Travancore-Cochin Chemicals Ltd., Udyogamandal P.O., (Via) Alwaye, Kerala State.
- *5. Indian Carbide Corporation Private Ltd., 95, Marine Drive, Bombay-2.
- *6. Calico Mills (Chemical Division), P.B. No. 12, Ahmedabad.

(B) IMPORTERS:

- *1. Hindusthan Chemical & Industrial Corporation, 22, Swallow Lane, Calcutta-1.
- *2. Boora Mal Amolak Ram, Diwan Hall, Chandni Chowk, Delhi-6.
- *3. Ghosh & Mitter, 33, Canning Street, Calcutta.
- *4. Industrial Gases Ltd., 138, Canning Street, Calcutta.
- *5. Atlas Fertilizers Ltd., 4, Bankshall Street, Calcutta.
- *6. Sadhan Bros. & Co., 33, Canning Street, Calcutta.
- *7. Carbide Trading Co., 13, Old China Bazar Street, Calcutta.
- *8. Vasantrao Goverdhandas & Bros., Patharia Palace, 75, Mohamed Ali Road, Bombay-3.
- *9. B. Paul & Company, Behind Imperial Bank, Delhi-6.
- *10. Bombay Calcium Carbide Merchants' Association, 49, Abdul Rehman Street, Bombay-3.
- *11. Sridar & Co., Mount Road, Madras-2.
- *12. Dey & Bros., 144-2, Harrison Road, Calcutta-7.
- *13. Jessop & Co. Ltd., 63, Netaji Subhas Road, Calcutta.
- *14. Radha Kanto Doss & Sons Private Ltd., 211, Old China Bazar Street, Calcutta.
- *15. Haranath Stores, 133-D, Netaji Subhas Road, Calcutta-1.
- *16. P. N. Dutt & Sons, 195, Old China Bazar Street, Calcutta.
- *17. Mill Products, 7/G, Clive Row, Calcutta-1.
- *18. Kajaria Sons Private Ltd., 32, Armenian Street, Calcutta.
- 19. National Carbon Company (India) Ltd., Kasturi Building, Jamshedji Tata Road, Bombay-1.
- *20. Carbide of Calcium Merchants' Association, 210/11, Old China Bazar Street, Calcutta-1.

(C) CONSUMERS:

- *1. Indian Oxygen Ltd., 48/1, Diamond Harbour Road, Calcutta-27.
- *2. Asiatic Oxygen & Acetylene Co. Ltd., 8, Dalhousie Square East, Calcutta-1.

- *3. Western Bengal Coal Fields Ltd., 8, India Exchange Place, Calcutta.
- 4. Indian Pipe Manufacturers Association, 35, Stephen House, 4, Dalhousie Square East, Calcutta-1.
- *5. Travancore Cement Ltd., Kottayam, Kerala State.
- *6. Trichy Everest Automobiles Ltd., Tiruchirapally (Cantt.), Madras State.
- 7. Gemini Gas Welding Works, 74, Palamkottah High Road, South India.
- *8. The Controller of Stores, Southern Railway, Perambur, Madras.
- *9. India Cements Ltd., Talaiyuthu, R. S.; Tirunelveli District, South India.
- *10. Sreekrishna Light Works, Manik Chowk, Ahmednagar.
- *11. Bombay Steel & Gas Welding Works, Baramati, District-Poona.
- *12. The Kolar Gold Mining Undertaking, (Central Administration), Supplies Department, Oorgaum P.O., Mysore State.
- *13. The Calcium Carbide Dealers and Consumers Association, 2, Maharaja Debendra Road, Calcutta.
- 14. Modi Vanaspati Mfg. Co. Ltd., Modinagar, U.P.
- *15. Industrial Gases Ltd., 138, Canning Street, Calcutta.
- 16. Engineering Association of India, India Exchange (8th floor), Calcutta.
- *17. The Directorate General of Ordnance Factories, 6, Esplanade, Calcutta (East).

(D) GOVERNMENT DEPARTMENTS:

- *1. The Chief Industrial Adviser, Ministry of Commerce & Industry, (Development Wing), Udyog Bhavan, King Edward Road, New Delhi.
- *2. The Collector of Customs, New Custom House, Bombay.
- *3. The Collector of Customs, Custom House, Madras.
- *4. The Collector of Customs, Custom House, Calcutta.
- *5. The Collector of Customs, Wellington Island, Cochin.
- *6. The Collector of Customs, Custom House, New Kandla.
- *7. The Superintendent of Customs, Jamnagar.
- *8. The Directorate General of Supplies, and Disposals, Ministry of Works, Housing and Supply, New Delhi.
- *9. The Director, Indian Standards Institution, Manak Bhavan, 9, Mathura Road, New Delhi.
- *10. The Director of Industries, Government of Bombay, Old Custom House Yard, Bombay.
- *11. The Secretary, Department of Industries, Labour & Co-operation, Government of Madras, Madras.
- *12. The Director of Industries, Government of West Bengal, Directorate of Industries New Secretariat Building (9th Floor), Hastings Street, Calcutta.
- 13. The Director of Industries, Government of Kerala, Trivandrum.
- *14. The Director, Central Electro-Chemical Research Institute, Karaikudi (Southern Railway).
- 15. The Secretary, Central Water & Power Commission, Shahjahan Road, New Delhi.
- *16. The Director, Central Fuel Research Institute, Jealgora, Dhanbad Distt. (Bihar).
- 17. The Director, Geological Survey of India, 27, Chowringhee, Calcutta-13.
- *18. The Secretary to the Govt. of India, Ministry of Railways, Railway Board, New Delhi.

(E) ASSOCIATION :

- *1. Indian Chemical Manufacturers' Association, 12, Netaji Subhas Road, Calcutta.

(F) DEALERS :

- *1. K. C. Dey & Sons, 161/1, Harrison Road, Calcutta-7.
- 2. Vasantraï Goverdhandas, Patharia Palace, 75, Mohmed Ali Road, Bombay-3.
- *3. Sridhar & Co., Mount Road, Madras-2.
- 4. Rama Paint Mart, Katra Burian Fatehpuri, Delhi-6.
- 5. Shree Guru Nanak Agencies, 52/43, New Dalmandi, Kanpur.
- *6. Dutta Daw & Co., Maharsi Debendra Road, Calcutta-7.
- *7. Thakur Stores, Raja Katra, Calcutta-7.
- *8. Basudeo Jugalkishore, 154/156, Cross Street, Calcutta-7.
- 9. J. N. Dutt & Brothers, Calcutta-1.
- 10. Jankidas Ramgopal, 48, Canning Street, Calcutta-1.
- 11. Bisbwanath Paul, 107, Khangurapatti Street, Calcutta-1.
- 12. Fancy Glass Co. Private Ltd., 187, Old China Bazar Street, Calcutta-1.



APPENDIX III

[Vide Paragraph 3.4]

List of persons who attended the Commissions public inquiry on 8th April, 1958

A. PRODUCERS :

- | | | |
|--------------------------|----|---|
| 1. Shri M. C. Agrawal | } | Representing Birla Jute Manufacturing Co. Limited, 8, India Exchange-Place, Calcutta. |
| 2. Dr. S. C. Dholakia | | |
| 3. Shri K. S. Narayanan | .. | Industrial Chemicals Limited 21, Maharaja Surya Rao Road, Madras-18. |
| 4. Shri N. Venkataraman | .. | Indian Carbide Corporation Private Limited, 95, Marine Drive, Bombay-2. |
| 5. Shri M. S. Bhandarkar | .. | Travancore Electro-Chemical Industries Ltd., P. O. Chingavanam, Kottayam, Kerala State. |
| 6. Shri H. T. Bhavnani | } | .. Calico Mills, Chemical Division, P. Box-12, Ahmedabad. |
| 7. Dr. B.R.C. Anand | | |

B. IMPORTERS :

- | | | |
|--------------------------------|----|---|
| 1. Shri Vasantrai Goverdhan- | } | .. Vasantrai Goverdhandas & Bros., Patharia Palace, 75 Mohmed Ali Road, Bombay-3. |
| 2. Shri Krishnakant G. Pandhi. | | |
| 3. Shri M. M. Dey | .. | Carbide of Calcium Merchants Association, 210/211 Old China Bazar Street, Calcutta. |

C. CONSUMERS :

- | | | |
|------------------------|----|--|
| 1. Shri A. K. Dutta | .. | Calcium Carbide Dealers & Consumers Association Ltd., 2, Maharshi Debendra Road, Calcutta. |
| 2. Shri A. K. Mukerji | } | .. Indian Oxygen Limited, 48/1 Diamond Harbour Road, Calcutta-27. |
| 3. Shri T. P. L. Sinha | | |
| 4. Shri M. Demelo | .. | Engineering Association of India, India Exchange (8th floor), Calcutta-1. |

D. GOVERNMENT DEPARTMENTS :

- | | | |
|------------------------|----|--|
| 1. Shri P. K. Seshan | .. | Development Wing, Ministry of Commerce & Industry, Udyog Bhavan, King Edward Rd., New Delhi. |
| 2. Shri M. M. Razdan | .. | Collector of Customs, New Custom House, Bombay. |
| 3. Shri B. C. Mathias | .. | The Secretary to the Govt. of India, Ministry of Railways, Railway Board, New Delhi. |
| 4. Shri S. N. Banerji | .. | Director of Supplies & Disposals, Govt. of India, New Delhi. |
| 5. Shri M. P. Mukherji | .. | Department of Explosives, Government of India, New Delhi. |
| 6. Shri Krishnaswamy | .. | Geological Survey of India, 27, Chowringhee, Calcutta-13. |

- | | | |
|----------------------|--------------|--|
| 7. Dr. A. Joga Rao | Representing | Central Electro-Chemical Research Institute,
Karaikudi (Southern Railway) |
| 8. Dr. P. V. Nair | „ | Director of Industries, Government of Kerala,
Trivandrum. |
| 9. Shri U. Chatterji | „ | Director of Industries, Government of West
Bengal, New Secretariat Building, (9th
Floor) Calcutta. |

E. ASSOCIATION :

- | | | |
|-----------------------------|---|--|
| 1. Shri C. G. Chandrashaker | „ | Indian Chemical Manufacturer's Association,
India Exchange, Calcutta. |
|-----------------------------|---|--|

F. OTHERS :

- | | | |
|----------------------|---|---|
| 1. Mr. C. Gylseth | „ | Norinco Limited; India House, 4th Floor,
Bombay-1. |
| 2. Mr. R. O. Jackson | „ | Burmah-Shell Oil Storage or Distributing Co.
of India Ltd., Burmah-Shell House; Ballard
Estate, Bombay. |



APPENDIX IV

[Vide Paragraph 12.]

Statement showing the c. i. f. prices, customs duties, clearing charges, landed costs & selling prices of imported Calcium Carbide

Per C.W.T.

Sl. No.	Source of information	Origin of imports	Date of import	Specification	C.i.f. price	Customs duty (50%)	Clearing charges	Landed cost	Selling price
1	2	3	4	5	6	7	8	9	10
					Rs.	Rs.	Rs.	Rs.	Rs.
1	Collector of Customs, Bombay	Yugoslavia	29-5-57	BSS 642/1935	28.45	..	..	43.30	..
		Do.	3-7-57	Do.	28.67	..	..	43.21	..
		Do.	30-8-57	Do.	28.67	..	..	43.21	..
		Holland	11-9-57	14 ND	36.10	..	..	..	..
		Yugoslavia	18-9-57	BSS 642/1935	29.10	..	..	..	..
		Do.	19-9-57	Do.	28.67	..	..	43.21	..
		Canada	20-12-57	..	38.08	..	..	59.05	..
		Do.	23-12-57	..	38.08	..	..	59.05	..
		Poland	25-4-57	..	28.67	..	..	42.32	..
2	Collector of Customs, Madras	Norway	9-10-57	..	28.38	14.19	0.22	42.79	..
		Sweden	11-10-57	..	36.40	18.20	0.22	54.82	..
		Canada	2-12-57	..	38.04	19.02	0.22	57.28	..
3	Collector of Customs, Calcutta.	China	Dec. 1957	50/80mm	26.00	13.00	0.90	39.90	..
		Yugoslavia	Nov. 1957	..	28.71	14.35	0.90	43.96	..
		Canada	Nov. 1957	..	37.40	18.70	0.90	57.00	..

4	Kajaria Sons Private Ltd., Calcutta	China	21-1-58	50/80 mm Gas yield 250 to 300 litres.	26.38	13.19	1.23	40.80	50.44
5	Jessop & Co. Ltd., Calcutta	Canada	19-9-57	I.S.D. Specification/ No. G/Chemicals/ 23 B.	39.63	19.81	0.88	60.32	69.65
6	Carbide Trading Co., Calcutta	Poland	Jan. 1957	50/80 mm Gas yield 280 lit. per Kg.	25.05	12.53	0.12	37.70	57.12 min. 60.13 max.
		China	Dec. 1957	50/80 mm Gas yield 250/260 lit. per Kg.	26.31	13.15	0.12	39.58	56.62
7	Ghosh & Mitter, Calcutta	Sweden	13-9-57	I.S.D. Specification No. G/Chemicals/ 23 B.	35.61	17.81	0.96	54.38	..
8	Hindusthan Chemical & Industrial Corporation, Calcutta.	Japan	4-12-57	50/80 mm Gas yield 290 litres and up.	32.59	16.29	1.47	50.35	..
9	M. M. Biswas, Calcutta	Yugoslavia	27-9-57	50/80 mm Gas yield 290 litres and up.	34.80	17.40	1.59	53.79	..
10	Cocks and Burners, Calcutta	Poland	Jan. 1957	50/80 mm Gas yield 280 litres.	30.04	15.02	1.37	46.43	..
11	Janaki Das Ram Gopal, Calcutta	China	9-8-57	D.G.S. and D Specification, No. G/ Chemical/23 B.	26.00	13.00	0.73	39.73	..
12	Radha Kanto Doss & Sons, Private Ltd., Calcutta	Canada	21-9-57	50/80 mm	35.43	17.72	1.84	54.99	68.86
13	Indian Oxygen Limited, Calcutta	Norway	1957	4/80 mm	28.88	..	..	..	As furnished by the Development Wing.
		Do.	Do.	Do.	29.34	..	..	..	
		Do.	Do.	50/80 mm	29.81	..	..	..	
		Do.	Do.	Do.	29.60	..	..	..	
		Do.	Do.	4/80 mm	28.63	..	..	..	

1	2	3	4	5	6	7	8	9	10
					Rs.	Rs.	Rs.	Rs.	Rs.
14	Asiatic Oxygen and Acetylene Company Ltd., Calcutta.	Yugoslavia	1957	50/80 m	1.10	..	..	..	At furnished by the Development Wing.
		Do.	Do.	Dc	1.75	..	..	..	
		Do.	Do.	Dc	1.75	..	..	..	
15	Boora Mal Amolok Ram, Delhi.	Do.	30-7-57	50/80 m	1.53	14.76	..	..	0.17 max. 14.13 min.
16	Dey and Brothers, Calcutta	Do.	Sept. 57	Do	3.62	14.81	..	..	55.11
		China	Nov. 57	Do	..67	12.83	..	..	57.08
7	Shridhar and Co., Madras	Canada	17-7-57	50/80 m	1.83	19.91	..	..	70.15
		Yugoslavia	30-9-57	Do	3.61	14.80	..	..	60.13
3	Vasantia Goverdandas and Bros., Bombay.	Do.	25-4-57	Dc	1.25	14.12	..	..	..
		Do.	17-5-57	Dc	3.85	14.12	..	..	..
		Do.	7-6-57	D	3.25	14.12	..	..	..
		Holland	13-9-57	14 N°	5.83	17.91	..	..	..
		Canada	30-12-57	50/80 m	7.40	18.70	0.98	57.08	..
19	Industrial Gases Ltd., Calcutta	Yugoslavia	4-9-57	BSS 642	3.10	14.55	0.50	44.23	52.00
		Holland	20-7-57	U.S. F catio	3.83	17.92	0.72	54.47	62.50